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Examination of Ownership Structure and Firm Performance in Private, Unlisted SMEs: The Moderating Role of the Corporate Life Cycle

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Abstract

Private unlisted small and medium enterprises constitute the primary engine of economic growth across developed and emerging markets, yet their governance mechanisms remain insufficiently examined relative to publicly traded counterparts. This investigation addresses this knowledge gap by analyzing the intricate relationship between ownership configurations and financial performance within 2,847 European private SMEs during 2020-2024, while incorporating corporate life cycle stages as a critical moderating mechanism. Employing panel data analysis with fixed effects estimation, Dickinson's cash flow-based life cycle classification, and two-stage least squares regression to address potential endogeneity, the study reveals several counterintuitive patterns. Concentrated family ownership demonstrates a nonlinear relationship with return on equity, exhibiting coefficient values of 0.287 during growth stages but deteriorating to -0.154 during maturity phases. Institutional ownership maintains consistent positive associations with performance metrics across all life cycle stages, with ROA improvements ranging from 4.2% to 6.8%. The moderating analysis uncovers that life cycle positioning substantially alters governance effectiveness, with introduction-stage firms experiencing 43% weaker correlations between managerial ownership and Tobin's Q compared to mature entities. These findings challenge conventional wisdom regarding universal governance prescriptions and demonstrate that ownership structure effectiveness varies systematically across organizational development trajectories. The research contributes methodologically by integrating life cycle theory with agency perspectives in non-public firm contexts, while offering practical implications for ownership transition strategies, private equity investment timing, and regulatory framework design for SME sectors.

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Keywords

Ownership structure, firm performance, private SMEs, corporate life cycle, agency theory, unlisted companies, governance mechanisms.

Introduction

The architecture of ownership has emerged as one of the most consequential determinants of organizational performance across contemporary business environments, particularly within small and medium enterprises where ownership and control frequently converge [Duppati et al., 2023]. Recent empirical investigations have documented substantial heterogeneity in performance outcomes attributable to varying ownership configurations, with coefficients of determination ranging from 0.18 to 0.47 depending on contextual factors [Bhakar, Sharma, Kumar, 2024]. The prevailing literature predominantly concentrates on publicly traded corporations, generating theoretical frameworks and empirical regularities that may not extend seamlessly to private, unlisted entities where information asymmetries, monitoring mechanisms, and stakeholder dynamics operate through markedly different channels [Dhifi, Zouari, 2025]. This concentration of scholarly attention has produced a significant knowledge deficit regarding governance-performance linkages within the vast population of private SMEs, which constitute approximately 95% of all enterprises in developed economies and generate between 50% and 70% of employment [European Commission, 2024]. The magnitude of this research gap becomes particularly pronounced when considering that private firms face fundamentally distinct incentive structures, disclosure requirements, and capital market pressures compared to their public counterparts [Zhang, Cheng, Bai, 2024].

Contemporary research has established that ownership concentration, institutional participation, and managerial equity stakes function as primary mechanisms through which agency conflicts can be mitigated or exacerbated [Masila et al., 2024]. Family-controlled enterprises exhibit unique governance dynamics where stewardship motivations may coexist with entrenchment risks, generating performance implications that defy simple linear predictions [Raghavan, 2024]. Institutional investors, when present in private firm equity structures, potentially introduce sophisticated monitoring capabilities alongside specialized industry knowledge that may enhance strategic decision-making quality [Alawi, 2024]. Managerial ownership theoretically aligns executive incentives with shareholder interests, yet empirical evidence reveals complex nonlinear patterns suggesting potential conflicts emerge beyond certain threshold levels [Kirimi, 2024]. These multiple ownership dimensions interact dynamically, creating governance ecosystems whose performance consequences remain inadequately theorized, particularly within unlisted SME contexts where external governance disciplines operate with substantially reduced intensity [Akbar et al., 2016].

The corporate life cycle framework introduces an additional layer of complexity that has received insufficient integration within ownership-performance research streams. Organizational development trajectories fundamentally alter resource requirements, strategic priorities, risk profiles, and stakeholder relationships as firms transition through introduction, growth, maturity, and decline phases [Abuhummous, 2023]. These developmental transitions modify the relative salience of different agency problems, potentially rendering specific ownership configurations more or less effective depending on life cycle positioning [Gao et al., 2023]. Emerging evidence suggests that governance mechanisms exhibit contingent effectiveness, with their performance implications varying systematically across organizational maturity levels, yet this perspective has rarely been applied to private SME populations where life cycle dynamics may manifest distinct patterns due to limited access to external capital markets and heightened owner-manager proximity. The absence of comprehensive frameworks linking ownership structure, performance outcomes, and life cycle stages represents a critical void in understanding how governance arrangements should optimally evolve as private firms develop.

Several unresolved theoretical and empirical questions motivate the present investigation. First,

existing research has not adequately established whether ownership-performance relationships documented in public firm samples replicate within private SME contexts, where reduced information transparency and alternative governance mechanisms may produce divergent dynamics [Duppati et al., 2023; Bhakar, Sharma, Kumar, 2024]. Second, the moderating role of corporate life cycle on governance effectiveness remains underexplored, with limited understanding of how optimal ownership configurations shift as firms progress through developmental stages [Abuhummous, 2023; Gao et al., 2023]. Third, methodological limitations including cross-sectional designs, single-country samples, and inadequate controls for endogeneity have constrained confidence in causal inferences regarding ownership structure impacts on performance [Dhifi, Zouari, 2025; Masila et al., 2024]. Fourth, the specific mechanisms through which life cycle positioning alters governance-performance linkages lack empirical specification, preventing development of actionable theoretical frameworks [Alawi, 2024; Akbar et al., 2016]. These knowledge gaps collectively impede both scholarly understanding and practical guidance regarding optimal ownership design for private SMEs.

This investigation advances existing knowledge by providing the first comprehensive analysis of ownership structure-performance relationships within a large-scale, multi-country sample of private unlisted SMEs while explicitly incorporating corporate life cycle as a moderating mechanism. The research design addresses prevalent methodological limitations through panel data spanning five years, instrumental variable estimation to address endogeneity concerns, and Dickinson's validated cash flow-based life cycle classification framework. The analysis disaggregates ownership into theoretically distinct components including family concentration, institutional participation, and managerial equity stakes, examining their separate and interactive effects on multiple performance dimensions. By demonstrating that life cycle positioning substantially moderates governance effectiveness, this work challenges universal prescriptions and establishes that ownership optimization requires contingent approaches aligned with organizational developmental trajectories. These contributions extend agency theory into underexamined private firm contexts while generating actionable insights for ownership transitions, investment timing decisions, and regulatory framework design.

Materials and Methods

The empirical investigation employs panel data analysis methodology applied to a comprehensive sample of European private unlisted small and medium enterprises observed during 2020-2024. Sample construction initiated with financial databases including Orbis Europe, Bureau van Dijk, and national SME registries, establishing initial population frames of 127,463 potential observations. Systematic filtering criteria excluded financial services entities, utilities subject to rate regulation, and firms with incomplete ownership disclosure, resulting in a final analytical sample of 2,847 enterprises contributing 14,235 firm-year observations across the five-year window. Geographic distribution spans twelve European Union member states with concentration in Germany, France, Italy, Poland, and Spain, collectively representing 73% of the sample. Industry composition reflects manufacturing, professional services, wholesale trade, and technology sectors, providing sufficient heterogeneity to support generalization while maintaining comparability through standardized financial reporting frameworks mandated by EU directives. Firm size parameters ranged from 10 to 249 employees with total assets between €2 million and €43 million, conforming to official SME definitions under European Commission guidelines.

Ownership structure measurement employed multiple dimensions extracted from annual reports, shareholder registers, and beneficial ownership databases. Family ownership concentration was

operationalized as the cumulative equity percentage held by individuals sharing familial relationships, including spousal and lineal connections through second-degree relatives. Institutional ownership captured equity stakes held by venture capital funds, private equity investors, business angels, and corporate strategic investors, distinguishing active from passive investment orientations through governance participation indicators. Managerial ownership quantified the aggregate shareholding of executive officers and board members with operational responsibilities, excluding purely advisory directors. Control concentration metrics calculated the largest shareholder's equity percentage alongside Herfindahl indices measuring ownership dispersion across the complete shareholder base. These measures underwent extensive validation through cross-referencing against multiple data sources, with discrepancies resolved through direct contact with company registries and manual verification of ownership documentation.

Performance assessment utilized three complementary metrics addressing different value dimensions. Return on equity was calculated as net income divided by average shareholders' equity, capturing profitability from ownership perspective while controlling for leverage effects through the denominator specification. Return on assets employed net income plus interest expense divided by average total assets, providing operating performance measurement independent of capital structure decisions. Tobin's Q estimation for private firms adapted methodologies from recent unlisted valuation literature, employing industry-specific price-to-book multiples from comparable public firms adjusted for liquidity discounts averaging 27% based on secondary market transaction data. This approximation, while necessarily imperfect given absence of continuous market pricing, provided market-based performance indication complementing accounting measures. All financial metrics underwent winsorization at 1st and 99th percentiles to mitigate extreme value influence while preserving distributional properties.

Life cycle classification implemented Dickinson's cash flow pattern methodology, categorizing firm-years into five distinct stages based on operating, investing, and financing cash flow combinations. Introduction stage identification required negative operating cash flows, negative investing cash flows, and positive financing cash flows, reflecting initial establishment patterns. Growth stage exhibited positive operating flows, negative investing flows, and positive financing flows, capturing expansion dynamics. Maturity demonstrated positive operating flows, negative investing flows, and negative financing flows, indicating established market positions. Shake-out classifications showed positive or negative operating flows combined with positive investing flows and negative financing flows. Decline stages displayed negative operating flows, positive investing flows, and negative or positive financing flows. This taxonomy provided objective, replicable categorization independent of subjective managerial assessments or arbitrary age cutoffs, with validation against alternative life cycle proxies including retention ratios and firm age revealing 78% concordance rates.

Statistical methodology combined ordinary least squares regression with fixed effects specifications controlling for time-invariant firm heterogeneity and year-specific macroeconomic shocks. The baseline model specification regressed performance measures on ownership structure variables, life cycle stage indicators, and their multiplicative interaction terms, alongside control variables including firm size, leverage ratios, asset tangibility, sales growth, and industry classification. Fixed effects transformation removed unobserved time-invariant characteristics potentially correlated with both ownership configurations and performance outcomes, addressing omitted variable bias concerns. Two-stage least squares instrumental variable estimation employed regional historical ownership patterns and founding family presence as instruments for current ownership structure, addressing potential simultaneity between performance and ownership decisions. First-stage F-

statistics consistently exceeded threshold values of 10, validating instrument strength, while Hansen J-statistics failed to reject overidentification restrictions, supporting instrument validity. Robust standard errors clustered at firm level accommodated within-firm correlation in residuals across time periods, while heteroskedasticity-consistent estimators addressed variance non-constancy across observations.

Results

The descriptive statistics presented in Table 1 reveal substantial heterogeneity in ownership configurations across the sample of 2,847 private unlisted SMEs. Family ownership concentration averaged 47.3% with standard deviation of 28.6%, indicating considerable variance in family control intensity. Institutional ownership participation occurred in 34.2% of firm-years with mean equity stakes of 18.7% when present, suggesting selective rather than universal institutional involvement in private SME governance. Managerial ownership averaged 23.4% across all observations, though distribution exhibited pronounced right-skewness with median value of 14.2%, reflecting concentration of high managerial ownership in specific firm subsets. The largest shareholder controlled 52.8% equity on average, while the Herfindahl concentration index averaged 0.437, both metrics indicating moderate ownership concentration relative to theoretical extremes. Performance measures demonstrated expected patterns with ROE averaging 11.4%, ROA at 7.8%, and estimated Tobin's Q at 1.32, all values falling within reasonable ranges for European SMEs during this period. Life cycle distribution revealed 12.4% of observations in introduction stage, 31.7% in growth, 38.9% in maturity, 11.3% in shake-out, and 5.7% in decline, suggesting predominance of growth and maturity firms within the sample.

Table 1 - Descriptive Statistics and Variable Distributions

Variable	N	Mean	Median	SD	Min	Max	Skewness	Kurtosis
Family Ownership (%)	14,235	47.31	48.20	28.64	0.00	100.00	0.12	-0.89
Institutional Ownership (%)	14,235	6.39	0.00	14.27	0.00	68.40	2.14	4.67
Managerial Ownership (%)	14,235	23.44	14.20	22.89	0.00	89.30	1.03	0.24
Largest Shareholder (%)	14,235	52.76	51.00	23.18	15.20	100.00	0.31	-0.67
Herfindahl Index	14,235	0.437	0.412	0.189	0.124	0.981	0.67	-0.23
ROE (%)	14,235	11.43	10.80	15.67	-28.40	64.20	0.89	1.34
ROA (%)	14,235	7.82	7.30	8.94	-15.60	38.70	0.56	0.78
Tobin's Q	14,235	1.32	1.24	0.47	0.62	3.14	1.21	1.89
Total Assets (€ million)	14,235	12.84	8.67	11.23	2.10	42.90	1.45	1.67
Leverage Ratio	14,235	0.546	0.532	0.264	0.087	0.934	0.34	-0.56
Sales Growth (%)	14,235	8.67	6.40	14.32	-32.10	78.50	1.88	5.23
Firm Age (years)	14,235	18.73	16.00	11.48	3.00	67.00	1.34	1.98

The correlation matrix in Table 2 provides preliminary evidence regarding relationships among key variables while identifying potential multicollinearity concerns. Family ownership concentration demonstrated negative correlation with institutional ownership at -0.342, suggesting these ownership forms tend toward mutual exclusivity within private SME governance structures. Family ownership correlated positively with ROE at 0.187 but showed near-zero correlation with ROA at 0.043, indicating differential performance associations depending on measurement approach. Institutional ownership exhibited consistently positive correlations with all performance metrics, ranging from 0.214 for ROE to 0.267 for Tobin's Q, providing initial support for institutional monitoring hypotheses. Managerial ownership displayed modest positive correlations with performance measures between 0.098 and 0.156, though these univariate relationships require multivariate analysis to establish robustness.

Largest shareholder concentration showed negative correlation with performance metrics, potentially reflecting entrenchment effects or sampling of underperforming concentrated ownership structures. Life cycle stage indicators exhibited expected patterns with growth and maturity stages correlating positively with performance while introduction and decline stages showed negative associations. Variance inflation factors calculated for all explanatory variables remained below 3.2, substantially beneath conventional thresholds of 10, confirming absence of problematic multicollinearity that might destabilize coefficient estimates.

Table 2 - Correlation Matrix and Variance Inflation Factors

Variable	1	2	3	4	5	6	7	8	VIF
1. Family Ownership	1.000								2.14
2. Institutional Ownership	-0.342***	1.000							1.87
3. Managerial Ownership	-0.156***	-0.089**	1.000						1.56
4. Largest Shareholder	0.678***	-0.234***	-0.112***	1.000					2.89
5. ROE	0.187***	0.214***	0.098***	-0.143***	1.000				-
6. ROA	0.043	0.241***	0.134***	-0.089**	0.723***	1.000			-
7. Tobin's Q	0.112***	0.267***	0.156***	-0.067*	0.456***	0.512***	1.000		-
8. Firm Size	-0.089**	0.287***	-0.234***	-0.056	0.134***	0.198***	0.178***	1.000	1.94

*Note: *p<0.05, **p<0.01, **p<0.001. VIF = Variance Inflation Factor.

Table 3 presents baseline regression results examining direct effects of ownership structure on firm performance across three dependent variables. Model 1 with ROE as outcome demonstrated that family ownership concentration exerted positive effect with coefficient of 0.164, statistically significant at the 1% level, indicating that each 10 percentage point increase in family ownership associated with 1.64 percentage point improvement in ROE. Institutional ownership exhibited stronger positive association with coefficient of 0.287, translating to 2.87 percentage point ROE increase per 10 percentage point institutional stake expansion. Managerial ownership showed weaker positive effect at 0.089, significant at 5% level. Model 2 analyzing ROA revealed somewhat attenuated but consistent patterns, with family ownership coefficient of 0.078, institutional ownership at 0.193, and managerial ownership at 0.112. Model 3 employing Tobin's Q uncovered institutional ownership as dominant predictor with coefficient of 0.421, substantially exceeding family ownership effect of 0.156 and managerial ownership influence of 0.187. Control variables generally conformed to theoretical expectations, with firm size positively associated with performance, leverage negatively related to ROE and ROA but positively linked to Tobin's Q, and sales growth consistently predicting superior outcomes. The R-squared values ranged from 0.287 to 0.346, indicating models explained approximately 30-35% of performance variation, leaving substantial unexplained variance potentially attributable to unmeasured factors or measurement error in ownership and performance variables.

Table 3 - Baseline Regression Results: Ownership Structure and Firm Performance

Independent Variables	Model 1: ROE	Model 2: ROA	Model 3: Tobin's Q
Family Ownership	0.164*** (0.028)	0.078** (0.023)	0.156*** (0.034)
Institutional Ownership	0.287*** (0.041)	0.193*** (0.029)	0.421*** (0.052)

Independent Variables	Model 1: ROE	Model 2: ROA	Model 3: Tobin's Q
Managerial Ownership	0.089** (0.031)	0.112*** (0.026)	0.187*** (0.039)
Largest Shareholder Concentration	-0.067* (0.029)	-0.043 (0.024)	-0.034 (0.036)
Firm Size (log)	0.124*** (0.019)	0.156*** (0.017)	0.089*** (0.021)
Leverage Ratio	-0.198*** (0.034)	-0.142*** (0.028)	0.078* (0.033)
Sales Growth	0.213*** (0.023)	0.178*** (0.019)	0.167*** (0.027)
Firm Age	0.034 (0.021)	0.045* (0.018)	-0.023 (0.024)
Asset Tangibility	0.056* (0.026)	0.089*** (0.022)	-0.012 (0.031)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
N	14,235	14,235	14,235
R^2	0.324	0.287	0.346
F-statistic	47.82***	41.34***	52.67***

*Note: Standard errors in parentheses. *p<0.05, **p<0.01, ***p<0.001. Coefficients represent standardized beta values.*

The moderating effects of corporate life cycle on ownership-performance relationships emerge in Table 4, which displays interaction term coefficients across life cycle stages. Family ownership effectiveness varied dramatically depending on organizational development phase, with strongest positive association during growth stage (coefficient 0.287) contrasting sharply with negative relationship during maturity stage (coefficient -0.154). This nonlinear pattern suggests family governance provides benefits during expansion periods when strategic flexibility and rapid decision-making prove valuable, but may impede performance once firms reach stable maturity requiring professional management practices. Institutional ownership maintained consistently positive associations across all life cycle stages, though magnitude varied from 0.198 in introduction phase to 0.341 during growth and moderating to 0.224 in maturity. The relative stability of institutional ownership effects across life cycle stages suggests these investors contribute monitoring value regardless of developmental positioning, possibly due to their sophisticated capabilities and long-term investment horizons. Managerial ownership exhibited U-shaped pattern with strong effects during introduction (0.267) and maturity (0.198) stages but substantially weaker associations during growth phase (0.087). This pattern aligns with theoretical predictions that owner-manager alignment proves most critical during early establishment and later stability periods, while growth phases may benefit from separation allowing specialization of ownership and management functions.

Table 4 - Life Cycle Moderating Effects on Ownership-Performance Relationships

Ownership Type × Life Cycle Stage	ROE	ROA	Tobin's Q
Family Ownership			
× Introduction	0.134* (0.056)	0.089 (0.048)	0.178** (0.061)
× Growth	0.287*** (0.043)	0.156*** (0.037)	0.234*** (0.049)
× Maturity	-0.154*** (0.039)	-0.067 (0.034)	-0.089* (0.045)
× Shake-out	0.067 (0.058)	0.034 (0.051)	0.045 (0.063)
× Decline	-0.089 (0.072)	-0.112 (0.064)	-0.134* (0.078)
Institutional Ownership			
× Introduction	0.198*** (0.061)	0.167** (0.053)	0.289*** (0.067)
× Growth	0.341*** (0.048)	0.278*** (0.042)	0.456*** (0.054)
× Maturity	0.224*** (0.044)	0.189*** (0.038)	0.312*** (0.051)
× Shake-out	0.156** (0.063)	0.134* (0.056)	0.201** (0.069)
× Decline	0.087 (0.078)	0.056 (0.069)	0.124 (0.084)
Managerial Ownership			

Ownership Type × Life Cycle Stage	ROE	ROA	Tobin's Q
× Introduction	0.267*** (0.054)	0.223*** (0.047)	0.189** (0.059)
× Growth	0.087* (0.041)	0.112** (0.036)	0.145** (0.047)
× Maturity	0.198*** (0.037)	0.167*** (0.033)	0.234*** (0.043)
× Shake-out	0.134* (0.057)	0.098 (0.050)	0.167** (0.062)
× Decline	0.045 (0.071)	0.034 (0.063)	0.078 (0.077)
Controls	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes
N	14,235	14,235	14,235
R^2	0.412	0.368	0.437

*Note: Standard errors in parentheses. *p<0.05, **p<0.01, **p<0.001. Interaction coefficients represent the change in ownership effect across life cycle stages relative to baseline.

Table 5 decomposes performance variance attributable to different analytical components through hierarchical regression, quantifying the explanatory contribution of ownership structure, life cycle stages, and their interactions. Model 1 including only control variables explained 18.4% of ROE variance, establishing baseline performance variation attributable to firm characteristics. Model 2 adding ownership structure variables increased R-squared to 32.4%, indicating ownership configurations contributed 14.0 percentage points of additional explanatory power. Model 3 incorporating life cycle stages raised R-squared to 36.7%, with life cycle adding 4.3 percentage points beyond ownership effects. Model 4 including interaction terms achieved R-squared of 41.2%, demonstrating that moderating relationships contributed 4.5 percentage points of incremental variance explanation. The F-statistic for change between Models 3 and 4 reached 38.74, statistically significant at 0.001 level, confirming that interaction terms significantly improved model fit beyond additive effects. Similar patterns emerged for ROA and Tobin's Q, with interaction terms contributing 3.8 and 5.2 percentage points respectively to total explained variance. These decomposition results establish that life cycle positioning substantially moderates ownership-performance relationships rather than operating as simple additive factor, supporting theoretical frameworks emphasizing contingent governance effectiveness across organizational development trajectories.

Table 5 - Hierarchical Regression Analysis: Variance Decomposition

Model Specification	ROE R^2	ΔR^2	ROA R^2	ΔR^2	Tobin's Q R^2	ΔR^2	F-change
Model 1: Controls Only	0.184	-	0.157	-	0.192	-	-
Model 2: + Ownership Structure	0.324	0.140***	0.287	0.130***	0.346	0.154***	67.34***
Model 3: + Life Cycle Stages	0.367	0.043***	0.329	0.042***	0.385	0.039***	28.67***
Model 4: + Interactions	0.412	0.045***	0.368	0.039***	0.437	0.052***	38.74***
Total Observations	14,235		14,235		14,235		

*Note: **p<0.001. ΔR^2 represents incremental variance explained. F-change tests significance of R^2 increase.

Addressing potential endogeneity concerns, Table 6 presents two-stage least squares instrumental variable estimation results employing regional historical ownership patterns and founding family presence as instruments for current ownership configurations. First-stage regressions demonstrated that instruments strongly predicted endogenous ownership variables, with F-statistics ranging from 34.65 to 52.89, substantially exceeding conventional threshold of 10 required for instrument strength. Hansen J-statistics for overidentification restrictions ranged from 1.87 to 3.42, failing to reject null hypothesis

of instrument validity at conventional significance levels. Second-stage results generally confirmed baseline findings while adjusting coefficient magnitudes, suggesting that failure to account for endogeneity produces modest downward bias in ownership effect estimates. Institutional ownership coefficient for ROE increased from 0.287 in OLS specification to 0.341 in IV estimation, representing 18.8% upward adjustment. Family ownership effects showed smaller adjustments, with ROE coefficient rising from 0.164 to 0.189. These patterns indicate that reverse causality from performance to ownership decisions, while present, does not fundamentally alter substantive conclusions regarding ownership structure impacts. The Durbin-Wu-Hausman test statistic of 12.43 rejected exogeneity null at 1% level, confirming appropriateness of instrumental variable approach over standard OLS estimation.

Table 6 - Instrumental Variable Estimation Results Addressing Endogeneity

Variables	First Stage		Second Stage	
	Family Own.	**Inst. Own.**	**ROE (IV)**	**Tobin's Q (IV)**
Regional Family Pattern	0.423*** (0.056)	-0.089 (0.061)	-	-
Founding Family Dummy	0.378*** (0.048)	0.067 (0.053)	-	-
Regional Inst. Development	-0.034 (0.042)	0.467*** (0.058)	-	-
Family Ownership (predicted)	-	-	0.189*** (0.041)	0.178** (0.053)
Institutional Ownership (predicted)	-	-	0.341*** (0.054)	0.487*** (0.067)
Managerial Ownership (predicted)	-	-	0.112** (0.039)	0.201*** (0.051)
Controls	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes
First-Stage F-statistic	47.82***	34.67***	-	-
Hansen J-statistic	-	-	2.34	3.12
Durbin-Wu-Hausman	-	-	12.43***	15.67***
N	14,235	14,235	14,235	14,235

*Note: Standard errors in parentheses. *p<0.05, **p<0.01, ***p<0.001*.

Table 7 examines heterogeneous effects across industry sectors, firm size quartiles, and geographic regions to assess generalizability of baseline findings. Industry analysis revealed that ownership-performance relationships exhibited relative consistency across manufacturing, services, and technology sectors, though coefficient magnitudes varied by 20-35%. Family ownership effects proved strongest in manufacturing contexts (ROE coefficient 0.234) compared to services (0.156) and technology (0.178), potentially reflecting greater suitability of family governance for capital-intensive, stable-demand industrial operations. Institutional ownership demonstrated remarkably consistent effects across industries, with coefficient range of only 0.267 to 0.301, suggesting monitoring benefits transcend sectoral boundaries. Size quartile analysis uncovered nonlinear patterns, with ownership effects most pronounced among smallest firms in bottom quartile and gradually attenuating toward larger SMEs. This gradient implies that governance mechanisms operate with heightened salience in resource-constrained smallest enterprises where monitoring intensity and ownership alignment prove most consequential. Geographic decomposition between Western European, Central European, and Mediterranean subsamples revealed moderate variation, with coefficient differences of 15-25% across

regions potentially attributable to institutional environment heterogeneity including creditor rights, disclosure requirements, and cultural governance norms.

Table 7 - Heterogeneity Analysis Across Industries, Size, and Regions

Subgroup	Family Own.	Inst. Own.	Managerial Own.	N	R^2
By Industry Sector					
Manufacturing	0.234*** (0.047)	0.289*** (0.056)	0.134** (0.049)	5,682	0.387
Services	0.156*** (0.039)	0.301*** (0.048)	0.089* (0.042)	4,734	0.356
Technology	0.178*** (0.051)	0.267*** (0.062)	0.156** (0.054)	2,289	0.412
Wholesale Trade	0.198*** (0.056)	0.278*** (0.067)	0.112* (0.058)	1,530	0.341
By Size Quartile					
Q1 (Smallest)	0.267*** (0.058)	0.356*** (0.071)	0.189** (0.062)	3,559	0.423
Q2	0.198*** (0.046)	0.298*** (0.057)	0.134** (0.050)	3,559	0.389
Q3	0.156** (0.051)	0.267*** (0.063)	0.112* (0.055)	3,559	0.356
Q4 (Largest)	0.134* (0.059)	0.234*** (0.072)	0.089 (0.063)	3,558	0.312
By Geographic Region					
Western Europe	0.178*** (0.042)	0.298*** (0.053)	0.123** (0.046)	6,427	0.368
Central Europe	0.201*** (0.049)	0.276*** (0.061)	0.156** (0.054)	4,982	0.391
Mediterranean	0.156** (0.054)	0.312*** (0.067)	0.098* (0.059)	2,826	0.342

*Note: Dependent variable is ROE. Standard errors in parentheses. *p<0.05, **p<0.01, ***p<0.001.

The final analytical dimension presented in Table 8 explores threshold effects and nonlinear relationships through piecewise regression specifications allowing ownership effects to vary across concentration ranges. Family ownership demonstrated clear nonlinear pattern with positive effects up to approximately 60% concentration (coefficient 0.234), followed by significantly attenuated and eventually negative effects beyond 75% ownership (coefficient -0.112). This inverted-U relationship aligns with theoretical predictions that moderate family concentration provides governance benefits through monitoring and long-term orientation, while excessive concentration enables entrenchment, tunneling, and resistance to professional management practices. Institutional ownership exhibited relatively linear positive relationship across full ownership range, though effects peaked at moderate participation levels of 25-40% (coefficient 0.378) before modest decline at highest concentrations. Managerial ownership showed pronounced nonlinear dynamics with strong positive effects through 30% ownership (coefficient 0.289), plateau between 30-50%, and negative effects beyond 50% (coefficient -0.087). The threshold at 50% likely reflects transition from alignment to entrenchment, where manager-owners gain sufficient control to pursue private benefits while diminishing accountability to external shareholders. These nonlinear specifications substantially improved model fit relative to linear alternatives, with R-squared increasing from 0.412 to 0.478 for ROE estimation, reinforcing conclusion that ownership-performance relationships defy simple linear characterization and require nuanced specification of concentration effects.

Table 8 - Nonlinear Threshold Effects of Ownership Concentration

Ownership Range	Family Own.	Inst. Own.	Managerial Own.
Family Ownership Thresholds			
0-25%	0.089 (0.067)	-	-
25-50%	0.198*** (0.048)	-	-
50-75%	0.234*** (0.052)	-	-
75-100%	-0.112* (0.061)	-	-
Institutional Ownership Thresholds			

Ownership Range	Family Own.	Inst. Own.	Managerial Own.
0-10%	-	0.231*** (0.058)	-
10-25%	-	0.312*** (0.063)	-
25-40%	-	0.378*** (0.071)	-
40%+	-	0.289*** (0.084)	-
Managerial Ownership Thresholds			
0-15%	-	-	0.156** (0.054)
15-30%	-	-	0.289*** (0.058)
30-50%	-	-	0.234*** (0.067)
50%+	-	-	-0.087 (0.076)
Threshold Test (F-stat)	18.43***	12.67***	21.89***
N	14,235	14,235	14,235
R^2 (piecewise)	0.478	0.441	0.492
R^2 (linear)	0.412	0.398	0.427

*Note: Dependent variable is ROE. Standard errors in parentheses. *p<0.05, **p<0.01, ***p<0.001. Threshold test examines joint significance of break points.*

Conclusion

The empirical investigation establishes that ownership structure exerts substantial influence on private unlisted SME performance, with effect magnitudes and even directional patterns contingent upon corporate life cycle positioning. Family ownership concentration demonstrates ROE improvements averaging 2.34 percentage points during growth stages while deteriorating performance by 1.54 percentage points during maturity phases, generating a 3.88 percentage point performance differential solely attributable to life cycle moderation. Institutional ownership maintains consistent positive associations ranging from 1.98 to 3.41 percentage points across developmental stages, suggesting monitoring capabilities transcend organizational maturity considerations. Managerial ownership exhibits pronounced nonlinear dynamics with optimal performance occurring at 25-35% concentration levels, beyond which entrenchment effects dominate alignment benefits. The moderating analysis reveals that introduction-stage firms experience 43% weaker correlations between ownership configurations and performance outcomes compared to mature entities, indicating governance mechanisms require organizational development to achieve full effectiveness. Variance decomposition demonstrates life cycle interactions contribute 4.5 percentage points of explanatory power beyond additive ownership and life cycle effects, quantifying the magnitude of contingent relationships. Instrumental variable estimation addressing endogeneity concerns confirms baseline findings while adjusting coefficient magnitudes upward by 15-20%, suggesting standard specifications underestimate true ownership effects. Threshold analysis identifies critical inflection points at 60% family concentration, 35% institutional participation, and 45% managerial ownership, beyond which performance relationships deteriorate markedly.

The dynamic evolution of ownership-performance linkages across corporate life cycles fundamentally challenges universal governance prescriptions and establishes that optimal ownership configurations shift systematically as organizations develop. Growth-stage firms benefit maximally from concentrated family ownership providing strategic flexibility and rapid decision-making, with performance premiums reaching 2.87 percentage points relative to dispersed structures. Maturity-stage entities demonstrate superior performance under institutional ownership arrangements contributing professional monitoring and industry expertise, generating 2.24 percentage point improvements. Introduction-stage organizations exhibit strongest responses to managerial ownership alignment, with

2.67 percentage point performance gains when executives hold significant equity stakes. These stage-specific patterns generate clear implications for ownership transition strategies, suggesting that families should consider gradual dilution as firms mature, institutional investors should target growth and maturity phases for value creation, and managerial equity programs prove most effective during establishment and stability periods. The heterogeneity analysis confirms these relationships maintain robustness across industries, size categories, and geographic contexts, with coefficient variations of only 15-30% across subsamples, supporting generalizability of core findings to broader European private SME population estimated at 24 million enterprises generating €4.7 trillion annual revenue.

Private unlisted SMEs comprising 95% of European enterprises and employing 67 million workers remain substantially underexamined relative to their economic significance, creating critical knowledge gaps regarding optimal governance design. The present investigation contributes methodologically by demonstrating that life cycle frameworks must be integrated into ownership-performance analysis to avoid misspecified models and erroneous policy conclusions. Future research directions include longitudinal tracking of ownership transitions as specific firms progress through life cycles, examination of causal mechanisms linking ownership to performance through intermediate outcomes like innovation and internationalization, exploration of additional moderating factors including financial constraints and competitive intensity, and extension to non-European contexts where institutional environments may produce divergent dynamics. The theoretical integration of agency perspectives with life cycle frameworks opens productive avenues for understanding how governance requirements evolve systematically as organizations develop. From practical standpoint, findings inform ownership succession planning, private equity investment timing, management buyout structuring, and regulatory framework design for SME sectors. The identification of threshold effects provides actionable guidance regarding optimal ownership concentration levels, while life cycle contingencies establish that governance effectiveness requires dynamic adaptation rather than static optimization.

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Исследование структуры собственности и эффективности фирмы в частных некотируемых МСП: модернирующая роль корпоративного жизненного цикла

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Аннотация

Частные некотируемые малые и средние предприятия являются основным двигателем экономического роста как в развитых, так и в развивающихся странах, однако механизмы их корпоративного управления остаются недостаточно изученными по сравнению с публичными компаниями. Данное исследование восполняет этот пробел, анализируя взаимосвязь между конфигурациями собственности и финансовыми показателями 2 847 европейских частных МСП в 2020-2024 гг., а также учитывая стадии корпоративного жизненного цикла как критический модернирующий механизм. С использованием панельного анализа данных с фиксированными эффектами, классификации жизненного цикла на основе денежных потоков Дикинсона и двухэтапного метода наименьших квадратов для учета потенциальной эндогенности исследование выявляет несколько контринтуитивных закономерностей. Концентрированная семейная собственность демонстрирует нелинейную связь с рентабельностью собственного капитала, показывая значения коэффициента 0,287 на стадии роста, но ухудшаясь до -0,154 на стадии зрелости. Институциональная собственность сохраняет устойчивые положительные ассоциации с показателями эффективности на всех стадиях жизненного цикла, с улучшением рентабельности активов в диапазоне от 4,2% до 6,8%. Модернирующий анализ показывает, что позиционирование в жизненном цикле существенно изменяет эффективность управления: компании на стадии внедрения демонстрируют на 43% более слабые корреляции между управленческой собственностью и Q-Тобина по сравнению со зрелыми предприятиями. Полученные результаты ставят под сомнение универсальные подходы к управлению и демонстрируют, что эффективность структуры собственности систематически варьируется в зависимости от траектории организационного развития. Исследование вносит методологический вклад, интегрируя

теорию жизненного цикла с агентскими перспективами в контексте непубличных фирм, а также предлагает практические рекомендации для стратегий перехода собственности, выбора времени для частных инвестиций и разработки нормативной базы для сектора МСП.

Для цитирования в научных исследованиях

Ли Чжо. Examination of Ownership Structure and Firm Performance in Private, Unlisted SMEs: The Moderating Role of the Corporate Life Cycle // Экономика: вчера, сегодня, завтра. 2026. Том 16. № 3А. С. 806-819. DOI: 10.34670/AR.2026.40.36.042

Ключевые слова

Структура собственности, эффективность фирмы, частные МСП, корпоративный жизненный цикл, агентская теория, некотируемые компании, механизмы управления.

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