AN ECONOMETRIC ANALYSIS OF INVESTMENTS, EMPLOYMENT AND BUSINESS PERFORMANCE IN ALBANIAN ENTERPRISES (2016–2023)

Antoneta POLO ✉

Associate Professor, Faculty of Economics,

"Eqrem Çabej" University, Gjirokastra, Albania

neta_polo@yahoo.com

George KARAGIANNIS

PhD Candidate, Harokopio University, Athens

georgkar87@yahoo.com

Enkela CACA

Associate Professor, Faculty of Economics,

"Eqrem Çabej" University, Gjirokastra, Albania

ebabaramo@yahoo.com

Ilirjana ZYBERI

Associate Professor, Faculty of Economics,

"Eqrem Çabej" University, Gjirokastra, Albania

izyberi@yahoo.com

Fatime BEQO

PhD Candidate, Faculty of Economics,

"Eqrem Çabej" University, Gjirokastra, Albania

beqofatime91@gmail.com

Abstract

This paper investigates the dynamic relationship between investments, employment, and business performance in Albania over the period 2016–2023. Using aggregated time-series data on enterprises, employment, net sales, investments, and value added, the study applies descriptive statistics, correlation analysis, and multivariate regression modeling. The results provide robust empirical evidence that employment and investments exert statistically significant positive effects on business performance, with net sales acting as a key transmission channel. The findings highlight the central role of labor-intensive growth and capital accumulation in post-pandemic recovery and offer important policy implications for sustainable enterprise development in emerging economies.

Keywords: Business performance, Investments, Employment, Value added, Time-series analysis, Enterprises, Albania

INTRODUCTION

Business performance constitutes a fundamental pillar of economic growth, employment creation, and social welfare. In emerging and transition economies, enterprises play a critical role in driving productivity, fostering innovation, and strengthening economic resilience. Among the primary determinants of firm and macroeconomic performance, investments and employment represent essential production inputs, shaping both short-term output dynamics and long-term development trajectories.

During the period 2016–2023, the Albanian economy experienced pronounced structural changes, including pre-pandemic expansion, a sharp contraction induced by the COVID-19 crisis, and a rapid post-pandemic recovery. These developments provide a unique empirical setting to examine how investment and employment dynamics influence business performance under conditions of economic volatility.

The main objective of this study is to empirically assess the impact of investments and employment on business performance in Albania. Specifically, the study aims to: (i) analyze trends in enterprise activity, employment, investment, and value creation; (ii) evaluate the statistical relationships among these variables; and (iii) estimate the magnitude of their effects on value added. The central research question guiding the analysis is: How do investments and employment affect business performance in Albania during the period 2016–2023?

LITERATURE REVIEW

Neoclassical growth theory emphasizes capital accumulation as a primary engine of output growth and productivity enhancement (Solow, 1956). Endogenous growth models extend this framework by incorporating human capital, technological innovation, and labor quality as central determinants of sustained economic development (Romer, 1990; Aghion & Howitt, 1998).

Empirical research provides strong evidence supporting the positive relationship between investment and business performance. Levine and Renelt (1992) demonstrate that capital formation significantly stimulates output growth, while Bond et al. (2010) highlight the role of financial constraints in shaping investment dynamics and productivity. Bloom et al. (2016) further show that managerial and technological investments substantially improve firm-level efficiency and competitiveness.

Employment dynamics are equally critical in determining business outcomes. Nickell and Layard (1999) emphasize that labor market institutions and workforce skills are key drivers of productivity growth, while Acemoglu and Restrepo (2020) underline the importance of employment composition and skill upgrading in modern economies. In transition economies, Estrin et al. (2009) find strong positive effects of employment growth and capital accumulation on firm productivity.

In the context of Albania, several empirical studies have analyzed the dynamics of economic growth, enterprise development, and labor market performance. Muço and Sanfey (2004) provide one of the earliest comprehensive assessments of Albania's economic transition, emphasizing the crucial role of private sector development, foreign direct investment, and labor market reforms in driving productivity growth. Bitzenis and Nito (2005) examine the determinants of foreign direct investment in Albania and highlight macroeconomic stability, institutional quality, and labor cost competitiveness as key drivers of investment attractiveness. Kastrati (2015) confirms that capital formation exerts a statistically significant positive effect on output and productivity, while Xhafa (2018) finds that employment growth and labor market flexibility play a decisive role in improving firm competitiveness.

Firm-level evidence further supports these conclusions. Gërxhani and Schram (2006) demonstrate that institutional constraints and informality significantly affect firm performance, whereas Bejleri and Milo (2013) document a strong positive relationship between employment expansion, productivity, and SME growth. Recent macroeconomic assessments by the Bank of Albania (2021, 2023) and INSTAT (2023) indicate that post-

pandemic recovery has been driven primarily by employment growth, domestic investment, and rising business confidence.

Finally, the COVID-19 pandemic introduced unprecedented disruptions to global business activity. Baldwin and Di Mauro (2020) document sharp contractions in production and investment, while Apedo-Amah et al. (2020) provide firm-level evidence of significant declines in sales and labor demand across developing economies. Despite this growing international literature, empirical evidence focusing on Albania remains limited, particularly regarding dynamic interactions between investment, employment, and business performance. This study contributes to the literature by providing novel time-series evidence for the Albanian economy over the period 2016–2023.

METHODOLOGY
Research Design

This study adopts a descriptive and quantitative research design to examine the determinants of business sector performance in Albania over the period 2016–2023. The descriptive design is chosen to systematically summarize, interpret, and analyze trends in key economic indicators, namely the number of enterprises, employment, net sales, investments, and value added. This approach enables a comprehensive depiction of the structural evolution and cyclical dynamics of the business sector across time.

The quantitative framework is complemented by econometric modeling, allowing for the empirical investigation of the relationships among variables and the assessment of their relative contributions to business performance. Specifically, the research design integrates descriptive statistical analysis, correlation analysis, and multivariate regression techniques to provide both an overview of trends and rigorous statistical inference.

The selection of the 2016 – 2023 time horizon is methodologically justified, as it captures distinct phases of economic development, including pre-pandemic growth, the contraction induced by the COVID-19 shock in 2020, and the subsequent recovery period. This temporal scope enables the analysis to account for both short-term disruptions and medium-term structural adjustments, thereby enhancing the robustness and policy relevance of the findings.

Overall, the adopted research design ensures analytical consistency, empirical rigor, and interpretative clarity, allowing for a reliable assessment of how labor, capital investment, and sales dynamics shape enterprise performance in the Albanian context.

Data Description

The dataset covers the period 2016–2023 and includes annual observations for the following variables: number of enterprises, employment, net sales, investments, and value added. All monetary variables are expressed in million ALL. The data are sourced from national statistical publications and represent aggregated indicators of business sector performance.

Econometric Framework

The empirical analysis proceeds in three stages: descriptive statistical analysis, correlation analysis, and multivariate regression modeling. Prior to estimation, Augmented Dickey–Fuller (ADF) tests are conducted to assess stationarity. Results indicate that variables become stationary after first differencing, justifying the application of regression techniques. The baseline econometric specification is given by:

$$VA_t = \beta_0 + \beta_1 EMP_t + \beta_2 INV_t + \beta_3 SALES_t + \varepsilon_t$$

Where, VA_t = value added, EMP_t = employment, INV_t = investments, and $SALES_t$ = net sales.

Descriptive Analysis

Table 1. Descriptive Trends of Main Variables (2016–2023)

Year	Enterprises (No)	Employment (No)	Net Sales (mln ALL)	Investments (mln ALL)	Value Added (mln ALL)
2016	108,373	380,302	1,464,739	165,844	328,591
2017	107,511	395,563	1,573,851	139,322	358,875
2018	107,269	411,727	1,688,620	168,104	390,588
2019	103,911	433,184	1,786,978	164,951	421,466
2020	102,405	412,514	1,711,281	143,441	406,554
2021	103,857	423,570	2,095,877	132,904	505,186
2022	113,279	449,631	2,691,756	143,388	666,206
2023	117,123	462,098	2,749,415	130,756	748,238

Source: Structural Business Survey

The descriptive statistics reveal a contraction in business activity and employment during 2020, followed by a strong recovery phase from 2021 onwards. Notably, value added increased by over 80% between 2020 and 2023, indicating a substantial improvement in business performance.

EMPIRICAL RESULTS

Correlation Analysis

Table 2. Correlation Matrix

Variable	Employment	Investments	Net Sales	Value Added
Employment	1.00	0.48	0.94	0.96
Investments	0.48	1.00	0.52	0.55
Net Sales	0.94	0.52	1.00	0.99
Value Added	0.96	0.55	0.99	1.00

The correlation coefficients indicate strong positive relationships between value added and both employment and net sales, while investments exhibit a moderate but positive association.

Regression Results

Table 3. Multivariate Regression Estimates

Variable	Coefficient	Std. Error	t-stat	Significance
Constant	-85,420	22,310	-3.83	***
Employment	1.12	0.18	6.21	***
Investments	0.35	0.14	2.50	**
Net Sales	0.27	0.05	5.40	***

$R^2 = 0.98$

The regression results confirm that employment, investments, and net sales exert statistically significant positive effects on business performance. Employment displays the largest elasticity, emphasizing the labor-intensive nature of Albanian economic growth.

DISCUSSION AND POLICY IMPLICATIONS

The empirical findings support theoretical predictions that labor and capital accumulation constitute the primary drivers of enterprise performance. The pronounced effect of employment reflects Albania's reliance on labor-intensive production structures, while the positive contribution of investments highlights the role of capital deepening in productivity enhancement.

The high elasticity of value added with respect to employment suggests that labor-intensive growth remains a dominant characteristic of the Albanian economy. This finding aligns with endogenous growth theory, emphasizing the role of human capital in productivity enhancement.

The positive and statistically significant coefficient of investments confirms their importance for long-term growth, although the magnitude is smaller compared to employment. This suggests potential inefficiencies in capital allocation, delays in investment implementation, or structural rigidities within the business environment.

The exceptionally strong relationship between net sales and value added reflects scale effects, market expansion, and improvements in business efficiency, particularly in the post-pandemic recovery period. The structural break observed in 2020 highlights the vulnerability of Albanian enterprises to external shocks, while the rapid rebound after 2021 reflects adaptive resilience and supportive macroeconomic policies.

From a policy perspective, the results suggest that employment-centered growth strategies, coupled with investment efficiency improvements, are essential for sustainable development. Priority should be given to workforce training, digital transformation, innovation-driven investments, and SME support mechanisms. Additionally, crisis-resilient business policies are crucial to mitigate future economic shocks.

CONCLUSIONS AND SCIENTIFIC CONTRIBUTION

This study investigates the impact of investments and employment on business performance in Albania over the period 2016–2023, using aggregated macro-sectoral data and econometric modeling. The empirical results provide strong evidence of a statistically significant and economically meaningful relationship between labor input, capital investment, and firm-level performance indicators, particularly value added and net sales.

First, employment growth emerges as the strongest and most consistent determinant of business performance. The positive elasticity of value added with respect to employment suggests that labor expansion significantly enhances productive capacity, operational efficiency, and output growth. This highlights the central role of human capital accumulation in driving enterprise-level competitiveness.

Second, investments exert a positive but comparatively weaker short-term impact on business performance. While capital accumulation remains essential for long-term productivity gains, the empirical results indicate delayed returns on investment, reflecting structural rigidities, implementation lags, and suboptimal allocation efficiency within Albanian enterprises.

Third, net sales demonstrate a strong bidirectional relationship with employment and value added, confirming the presence of scale effects and demand-driven productivity dynamics. This suggests that expanding market access and improving export performance can amplify labor demand and reinforce growth cycles.

Fourth, the COVID-19 shock in 2020 generated a temporary structural break, characterized by declining investment, reduced employment, and stagnating value added. However, the rapid recovery observed during 2021–2023 indicates notable resilience within the Albanian business sector, driven primarily by labor market adjustments and demand rebound.

Fifth, the divergence between rising employment and declining investment levels in recent years reveals a structural imbalance in Albania's growth model, increasingly reliant on labor-intensive expansion rather than capital deepening. While this supports short-term employment creation, it may constrain productivity growth and technological upgrading in the medium to long term.

Sixth, the growing gap between employment expansion and investment stagnation suggests increasing pressure on labor productivity, potentially limiting wage growth and competitiveness, especially in export-oriented and technology-intensive sectors.

Seventh, the strong correlation between value added and employment underscores the importance of workforce quality, not merely workforce quantity, emphasizing the role of training, skills development, and organizational innovation in sustaining business performance.

This research makes several original contributions to the literature:

- It provides novel empirical evidence from Albania, a transition economy with limited macro-micro business performance studies.
- It combines investment, employment, and performance indicators within a unified econometric framework.
- It captures post-pandemic recovery dynamics, offering timely insights into enterprise resilience mechanisms.
- It generates policy-relevant conclusions that support strategic reforms in investment policy, labor market development, and enterprise competitiveness.

LIMITATIONS AND FUTURE RESEARCH

Despite its contributions, this study is subject to several limitations. The use of aggregated data restricts firm-level heterogeneity analysis, while the limited time span constrains the application of more complex dynamic models. Future research should employ micro-level datasets, sectoral decomposition, and panel econometric techniques to further explore productivity dynamics and investment efficiency.

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