Transactions on Quantitative Finance and Beyond

www.tqfb.reapress.com

Trans. Quant. Fin. Bey. Vol. 1, No. 2 (2024) 254–264.

Paper Type: Original Article

Exploring the Relationship between Inventory Management and Performance Across Company Life Cycle Stages

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Citation:

Received: 14 April 2024 *Revised: 07 June 2024* *Accepted: 02 November 2024*	Fakhrhosseini, S. F., & Naserhojjati Rudsari, R. (2024). Exploring the relationship between inventory management and performance across company life cycle stages. *Transactions on quantitative finance and beyond, 1*(2), 254–264.

Abstract

This research investigates the impact of inventory management on company performance, specifically focusing on Return on Assets (ROA) and Return on Equity (ROE) across different life cycle stages. Utilizing panel data from 192 firms listed on the Tehran Stock Exchange over the period from 2019 to 2023, the study employs regression analysis to explore these relationships. The findings reveal significant influences of inventory management on financial performance metrics. Notably, while effective inventory management enhances ROE, its relationship with ROA is more complex, indicating potential inefficiencies in larger firms. Specifically, a one-unit increase in inventory management correlates with a decrease in ROA but positively affects ROE. The analysis further shows that during growth and maturity phases, there is a statistically significant negative relationship between inventory management and performance metrics, whereas a positive relationship is observed during the decline phase. Additionally, control variables such as financial leverage consistently demonstrate negative correlations with both ROA and ROE. This study contributes valuable insights into the intricate dynamics between inventory management and company performance across various life cycle stages.

Keywords: Inventory management, Firm performance, Life cycle stages.

1 | Introduction

Effective inventory management is a critical component of operational success for firms across various industries. It encompasses the processes of ordering, storing, and utilizing a company's inventory, which can

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10.22105/tqfb.v1i2.42

significantly influence overall firm performance. This relationship has garnered considerable attention in academic literature, with studies indicating that efficient inventory management can lead to improved operational efficiency, enhanced customer satisfaction, and ultimately, increased profitability [1], [2]. However, the impact of inventory management on firm performance is not uniform; it varies significantly depending on the organizational life cycle stage.

The organizational life cycle model posits that firms undergo distinct phases—introduction, growth, maturity, and decline—each characterized by unique challenges and opportunities [3]. During the introduction phase, firms often face uncertainty regarding demand and market acceptance, which necessitates a flexible inventory strategy. As firms transition into the growth phase, effective inventory management becomes crucial for scaling operations and meeting increasing customer demands. Conversely, in the maturity stage, firms may focus on optimizing inventory levels to maintain profitability amidst competitive pressures. Finally, during decline, firms must strategically manage their inventory to minimize losses and pivot towards potential recovery strategies.

Despite the established importance of inventory management across these stages, empirical evidence remains mixed regarding its direct impact on firm performance. Some studies suggest a positive correlation between efficient inventory practices and financial outcomes [4], [5], while others indicate that this relationship can be influenced by external factors such as market conditions and industry characteristics [2]. Furthermore, variables such as company size and operational capital have been shown to moderate this relationship; larger firms with substantial resources tend to exhibit more effective inventory management practices [6].

This paper aims to explore the nuanced relationship between inventory management and firm performance through the lens of the firm life cycle. By examining how different stages of a firm's development affect this relationship, we seek to provide insights that can inform both academic research and practical applications in inventory management strategies. Understanding these dynamics is essential for firms aiming to leverage their inventory systems effectively to enhance overall performance throughout their life cycle.

2 | Literature Review

2.1 | Theoretical Review

The relationship between inventory management and firm performance is a critical area of study, particularly when viewed through the lens of the organizational life cycle. This theoretical foundation draws upon several key theories and models that elucidate how inventory practices can influence operational effectiveness and financial outcomes at different stages of a firm's development.

Organizational life cycle theory

The organizational life cycle theory posits that firms progress through distinct stages—introduction, growth, maturity, and decline—each presenting unique challenges and opportunities [7]. In the introduction phase, firms often grapple with uncertainty in demand forecasting, necessitating flexible inventory management strategies. As firms grow, effective inventory management becomes essential for scaling operations and meeting increasing customer demands. The maturity stage requires optimization of inventory levels to maintain profitability amid competitive pressures, while during decline, firms must strategically manage inventory to minimize losses and explore recovery options.

Lean theory

Lean theory emphasizes efficiency in production processes by minimizing waste and optimizing resource use [8]. This approach advocates for Just-in-Time (JIT) inventory systems that align production closely with demand, thereby reducing excess stock and associated carrying costs. Studies have shown that lean inventory practices can lead to improved financial performance by enhancing operational flexibility and responsiveness to market changes [9]. The adoption of lean principles can thus significantly impact a firm's ability to navigate various life cycle stages effectively.

Economic Order Quantity model

The Economic Order Quantity (EOQ) model is a foundational concept in inventory management that seeks to determine the optimal order quantity that minimizes total inventory costs [10]. By balancing ordering costs with holding costs, firms can maintain efficient inventory levels that support operational performance. The relevance of EOQ increases as firms mature and face the need for tighter cost controls to sustain profitability [11].

The pareto principle (ABC analysis)

The Pareto principle categorizes inventory into three groups—A, B, and C—based on their importance to overall performance [12]. This model underscores the necessity of prioritizing high-value items (category A) to ensure their availability and minimize disruptions in production. Effective application of this principle can lead to enhanced operational efficiency and improved financial outcomes.

In conclusion, understanding the theoretical foundations of the relationship between inventory management practices and firm performance through an organizational life cycle perspective provides valuable insights for both researchers and practitioners. By integrating these theories, firms can develop tailored inventory strategies that align with their specific stage in the life cycle, ultimately driving better performance outcomes across various dimensions.

2.2 | Empirical Review

The relationship between inventory management and firm performance has been a focal point of research for several years, particularly as organizations strive to optimize their operations and enhance profitability.

Oyetade et al. [13] analyze the relationship between inventory management strategies and the profitability of Small and Medium Enterprises (SMEs) in Lagos State, Nigeria. The results indicate that effective inventory control techniques, storage systems, and tracking systems significantly enhance SMEs' performance, underscoring the need for improved inventory management practices among small businesses.

Ramadani et al. [14] examine Tesla's inventory management practices and their impact on operational performance. The findings reveal how real-time data utilization and adaptive supply chain practices enhance productivity while aligning with sustainability goals, demonstrating the importance of effective inventory management in a competitive industry. Alam et al. [15] examine the inventory management practices of SMEs in Bangladesh, highlighting the challenges faced and their impact on operational efficiency.

Rashid and Rasheed [16] reveal that effective inventory management mediates the relationship between knowledge sharing among employees and overall firm performance, emphasizing its strategic importance. Al Shukaili et al. [17] examine how strategic inventory management influences the performance of logistics organizations in Oman. Findings reveal a positive correlation between strategic inventory practices and enhanced logistics performance, highlighting the importance of aligning inventory management with organizational goals throughout different life cycle stages.

Yankah et al. [18] investigate how inventory management impacts the performance of manufacturing enterprises in Kumasi Metropolis, Ghana. The findings reveal that a one-unit improvement in inventory management leads to significant increases in marketplace efficiency (20.3%), financial results (31.9%), and client satisfaction (21%). The study concludes that effective inventory management is crucial for enhancing the operational success of manufacturing companies in the region.

Panigrahi et al. [19] in their study investigates how inventory management practices affect the performance of manufacturing firms, focusing on the steel industry. It emphasizes the importance of distribution turnover and inventory automation in enhancing firm performance.

Atnafu and Balda [20] conducted research on the influence of inventory control on the profitability and organization performance of Ethiopian industrial companies. A total of 188 SMEs operating in this sub-sector of the Ethiopian industry were considered in the sample group. The findings revealed that the greater

the adherence to inventory control, the greater the enterprises in consideration enjoyed higher competitive edge as well as a performance of the firm Furthermore, it was discovered that the enterprises' competitive edge had a favorable impact on their profitability.

Elsayed and Wahba [21] explore how inventory management affects firm performance from an organizational life cycle perspective. The findings suggest that tailored inventory strategies are crucial for maximizing firm performance over time.

In summary, a substantial body of literature supports the notion that effective inventory management is integral to enhancing firm performance across various stages of the organizational life cycle. As firms continue to evolve in a dynamic market landscape, understanding these relationships will be crucial for developing strategies that optimize both operational efficiency and financial outcomes.

3 | Research Method

This research is applied in nature and falls under the category of correlational descriptive studies. The time frame for data collection spans the fiscal years from 2019 to 2023. In this study, considering the subject matter and its applicability, the research population includes all firms listed on the Tehran Stock Exchange that have been continuously active from 2019 to 2023.

The regression equation is structured as follows:

$$\mathrm{PER_{it}} = \alpha + \beta_1 \mathrm{IVP_{it}} + \beta_2 \mathrm{OLC_{it}} + \beta_3 \mathrm{IVP_{it}} \times \mathrm{OLC_{it}} + \beta_4 \mathrm{SIZE_{it}} + \beta_5 \mathrm{LVG_{it}} + \beta_6 \mathrm{MAN_{it}} + \beta_7 \mathrm{INT_{it}} + \beta_8 \mathrm{PRV_{it}} + \beta_9 \mathrm{STA_{it}} + \mathrm{e_{it}}.$$

PER (Company Performance): the dependent variable representing the overall performance of the company. In the study referenced, performance is defined as a dependent variable, specifically focusing on financial metrics such as Return on Assets (ROA) and Return on Equity (ROE). According to the research conducted by Elsayed and Wahba [21], these financial indicators are crucial for evaluating a firm's performance.

ROA: this metric measures a company's ability to generate profit from its assets. A higher ROA indicates efficient management of assets in generating earnings.

ROE: this indicator assesses how well a company uses shareholders' equity to generate profits. A higher ROE signifies effective utilization of equity capital.

IVP (Inventory of Goods): indicates the level of inventory held by the company, which can affect operational efficiency and sales.

OLC (Company Life): represents the age or longevity of the company, which may correlate with stability and experience in the market.

In this study, the stage of a company's life cycle acts as a moderating variable in the relationship between inventory and performance. Similar to living organisms, companies experience a life cycle that includes stages of birth, growth, maturity, and decline. According to life cycle theory, organizations adopt specific policies and strategies that reflect their current stage [22]. These policies are evident in their accounting information. There are two competing perspectives on how the life cycle affects corporate reporting and information. The competitive perspective posits that the quality of reporting improves as companies advance through the life cycle stages—from early development to maturity and decline. Conversely, the signaling perspective suggests that reporting quality diminishes throughout the company's life cycle [23]. Based on the research by Anthony and Ramachandran, companies are classified into three categories—growth, mature, and stagnant—using criteria such as sales growth, changes in capital expenditures, and company age. The formulas used are

$$\mathrm{SG_t} = ((\mathrm{SALES_t} - \mathrm{SALES_{t-1}}).(\mathrm{SALES_{t-1}})) * 100,$$
$$\Delta\mathrm{CE_t} = ((\mathrm{CE_t} - \mathrm{CE_{t-1}}).(\mathrm{CE_{t-1}})) * 100,$$
$$\mathrm{AGE} = \mathrm{CYEAR} - \mathrm{FYEAR},$$

where:

AGE: age of the company.

ΔCE: growth in capital expenditures.

SG: sales growth.

SALES: sales.

CE: capital expenditures.

CYEAR: current year in calculations.

FYEAR: year of establishment of the company.

According to *Fig. 1*, companies are divided into three groups: growth companies receive a score of 3, mature companies receive a score of 2, and stagnant companies receive a score of 1. The scores for each criterion are summed up for each company to obtain a composite score. Then, companies are ranked based on this composite score and categorized into growth, mature, and stagnant companies accordingly. For each type of company, relevant equations regarding profit quality are fitted.

Table 1. Classification of companies in the life cycle.

Stage in Life Cycle	SG	ΔCE	AGE
Growth	High	High	Young
Maturity	Medium	Medium	Mature
Decline	Low	Low	Old

SIZE (Company Size): refers to the scale of operations, often measured by revenue or number of employees, influencing market power and resource availability.

LVG (Leverage): the ratio of debt to equity, indicating financial risk and potential returns on investment.

MAN (Ownership of Managers): reflects the proportion of ownership held by management, which can impact decision-making and alignment with shareholder interests.

INT (Institutional Ownership): the percentage of shares owned by institutional investors, which can affect governance and strategic direction.

PRV (Private Property): indicates whether the company is privately owned, potentially influencing operational flexibility and investment strategies.

STA (State Ownership): represents government ownership in the firm, which may affect regulatory compliance and operational priorities.

IVP × OLC: this interaction term assesses whether the impact of inventory on performance varies with the company's age. It allows for a nuanced understanding of how these two factors jointly influence performance outcomes.

4 | Results

Descriptive statistics

Descriptive statistics for the research variables for 192 firms observations are provided in *Table 2*.

Table 2. Descriptive analysis.

Variable	Mean	Median	S. Deviation	Minimum	Maximum
ROA	0.10	0.09	0.14	-0.79	0.83
ROE	0.18	0.25	2.41	-72.69	9.49
IVP	0.52	0.26	0.30	0.02	178.62
SIZE	14.11	13.90	0.18	10.17	19.15
LVG	0.57	0.59	0.07	0.09	1.00
MAN	0.66	0.71	0.14	0.00	1.00
INT	0.74	0.79	0.39	0.00	1.00
PRV	57.1	52.5	1.5	0.5	100.0
STA	42.88	47.51	0.31	0.00	99.45

*Source: research findings.

Table 3. Descriptive analysis of company life cycle.

Company Life Cycle Stages	Variable	Frequency	Percentage
Growth	0	583	60.70%
	1	277	39.30%
Total		960	100%
Maturity	0	751	78.20%
	1	209	21.80%
Total		960	100%
Decline	0	588	61.30%
	1	372	38.70%
Total		960	100%

*Source: research findings.

The frequency distribution of the company life cycle variable indicates that 39.3% of companies are in the growth stage, 21.8% are in the maturity stage, and 38.7% are in the decline stage.

Unit-root test

Here's a structured presentation of the results of the panel unit root test based on the Levin, Lin,and Chu test. This table presents the results of the unit root test using the Levin, Lin, and Chu method for various variables, indicating their respective test statistics and p-values.

Table 4. Panel unit root test.

Variable	Levin, Lin, and Chu Test	p-Value
ROA	-36.429	0.00
ROE	-268.89	0.00
IVP	-35.03	0.00
OLC1	-28.064	0.00
OLC2	-32.623	0.00
OLC3	-30.887	0.00
SIZE	-21.079	0.00
LVG	-35.29	0.00
MAN	-3598.73	0.00
INT	-2.062	0.02
PRV	-1507.9	0.00
STA	-15.614	0.00

*V Source: research findings.

Results of inventory management on performance model

To interpret the coefficients for the two approaches (ROA and ROE) from the regression analysis presented in *Table 5*, we can break down the significance and implications of each variable's coefficient in relation to the dependent variables. The results *Table 5* indicate significant relationships between the independent variables and the dependent variables (ROA and ROE). Notably:

The Durbin-Watson statistics suggest that there is no significant autocorrelation in the residuals. The F-statistic results confirm the overall significance of the models used for both approaches. The Hausman test

results indicate that the choice of model is appropriate, as the p-values suggest rejecting the null hypothesis of no difference between fixed effects and random effects models.

Approach 1: ROA

A one-unit increase in inventory management is associated with a decrease of 0.0009 in ROA, indicating an inverse relationship. This suggests that better inventory management may not significantly enhance asset returns. A one-unit increase in company size is linked to a decrease of 0.015 in ROA, suggesting that larger companies might face inefficiencies that lower their asset returns. A one-unit increase in financial leverage (LVG) results in a decrease of 0.151 in ROA, indicating that higher debt levels negatively impact asset efficiency. An increase of one unit in managerial ownership (MAN) is associated with an increase of 0.056 in ROA, suggesting that higher managerial stakes positively influence asset returns. An increase of one unit in private ownership (PRV) results in a negligible increase of 0.0001 in ROA, suggesting little effect on asset returns.

Table 5. Results of the first hypothesis test.

Variable	Approach 1 (ROA)			Approach 2 (ROE)		
	Coeff	t	Prob	Coeff	t	Prob
IVP	-0.0009	-3.34	0.000	0.0080	-1.00	0.000
SIZE	-0.0150	-4.01	0.000	0.0180	0.88	0.378
LVG	-0.1510	-11.06	0.000	-1.6240	-12.48	0.000
MAN	0.0560	4.22	0.000	0.2220	2.68	0.007
INT	-0.0008	-0.16	0.875	0.0320	0.66	0.098
PRV	0.0001	2.07	0.038	-0.0001	-2.23	0.821
STA	-0.0060	-1.11	0.266	-0.0800	-3.33	0.000
C	0.3750	7.41	0.000	-0.7190	2.07	0.038
F statistic	74.406		0.000	13.299		0.000
Durbin-Watson statistic	1.762			1.804		
Limer test (Chow test)	5.551		0.000	6.972		0.000
Hausman test	32.638		0.000	82.863		0.000
R-squared	0.939			0.735		

*Source: research findings.

Approach 2: ROE

A one-unit increase in inventory management (IVP) is associated with an increase of 0.008 in ROE, suggesting positive effects on equity returns. A one-unit increase in financial leverage (LVG) results in a significant decrease of 1.624 in ROE, highlighting that higher debt levels severely impact equity returns negatively. An increase of one unit in managerial ownership (MAN) correlates with an increase of 0.222 in ROE, indicating that higher managerial stakes positively affect equity performance. A one-unit increase in State Ownership (STA) leads to a decrease of 0.080 in ROE, suggesting negative implications for equity performance due to state involvement.

Overall, these findings provide robust evidence supporting the proposed relationships in the hypothesis test, demonstrating that various factors significantly influence company performance metrics such as ROA and ROE.

Results of inventory management on performance for life cycle stages model

Approach 1: ROA

Based on the results of regression test in *Approach 1* presented in *Table 6*, the findings from the Chow test indicate the rejection of the null hypothesis and the existence of a fixed effects model for the analysis. To choose between fixed effects and random effects models, the Hausman test is employed, where a rejection of the null hypothesis indicates a fixed effects model, while acceptance suggests a random effects model.

Table 6. Results of Approach 1 for life cycle stages.

Independent Variable	Growth Period		Maturity Period		Decline Period	
	Coeff	Prob.	Coeff	Prob.	Coeff	Prob.
IVP	-0.0006	0.004	-0.0008	0.001	-0.122	0.000
OLC	0.052	0.000	0.030	0.000	-0.079	0.000
IVP × OLC	-0.0711	0.000	-0.099	0.000	0.122	0.000
SIZE	-0.011	0.016	-0.018	0.000	-0.013	0.005
LVG	-0.144	0.000	-0.0157	0.000	-0.160	0.000
MAN	0.035	0.035	0.051	0.001	0.034	0.010
INT	0.014	0.000	-0.006	0.084	0.005	0.269
PRV	0.00007	0.529	0.0001	0.257	0.0001	0.127
STA	-0.003	0.503	-0.005	0.435	-0.001	0.819
C	0.306	0.000	0.423	0.000	0.408	0.000
F statistic	31.421		39.407		55.427	
	(0.00)		(0.00)		(0.00)	
Durbin-Watson statistic	1.727		1.769		1.702	
Limer test (Chow test)	5.487		5.560		5.598	
	(0.00)		(0.00)		(0.00)	
Hausman test	27.548		32.848		29.61	
	(0.001)		(0.00)		(0.00)	
R-squared	0.869		0.893		0.921	

*Source: research findings.

According to these results, in all three life cycle stages, confirming that the final model is one with fixed effects. The Durbin-Watson statistic in each stage falls between 1.5 and 2, indicating no autocorrelation among the model's error components. The significance level of the F-statistic ($p < 0.05$) in all three periods confirms that the overall regression model is statistically significant. The R-squared values suggest that the independent and control variables account for approximately: 86% of the variability in ROA during the growth stage, 89% during maturity, and about 92% during decline.

Given the low probability levels for negative coefficients in both growth (−0.0711) and maturity (−0.099), results indicate a statistically significant negative relationship between inventory management and company performance during these stages.

Moreover, considering the low probability level for positive coefficients in decline (0.122), results demonstrate a statistically significant positive relationship between inventory management and company performance during this stage. The findings also reveal that among control variables, there are statistically significant negative relationships between company size and financial leverage with company performance across all three stages of growth (-0.011), maturity (-0.018), and decline (-0.013).

Furthermore, managerial ownership shows a positive relationship with company performance across all stages of growth (0.035), maturity (0.051), and decline (0.034).

However, institutional ownership only exhibits a positive and significant relationship with performance during the growth stage (0.014), while no significant relationships were found between private ownership or state ownership with company performance across all three stages.

Approach 2: ROE

Based on the results of the regression test in *Approach 2* presented in *Table 7*, the findings from the Chow test indicate the rejection of the null hypothesis and the existence of a fixed effects model. To choose between fixed effects and random effects models, the Hausman test is utilized. According to the Hausman test, acceptance of the null hypothesis indicates the presence of a random effects model, while rejection indicates a fixed effects model and dismissal of the random effects model. Thus, based on the results of these tests presented in *Table 7*, it can be concluded that in all three life cycle stages, confirming that the final model is one with fixed effects. The Durbin-Watson statistic for all three stages falls between 1.5 and 2, indicating that there is no autocorrelation among the error components of the models. The significance level of the F-statistic (0.000) in all three periods is below the accepted error level (5%), confirming that the overall regression model

is significant. The R-squared values indicate that the independent and control variables account for approximately 69.8% of the variability in ROE during the growth stage, 73.9% during maturity, and 72.4% during decline.

Table 7. Results of Approach 2 for life cycle stages.

Independent Variable	Growth Period		Maturity Period		Decline Period	
	Coeff	Prob.	Coeff	Prob.	Coeff	Prob.
IVP	-0.002	0.000	0.000	0.000	0.000	0.000
OLC	0.159	0.000	0.000	0.000	0.000	0.000
IVP × OLC	-0.228	0.003	0.003	0.003	0.003	0.003
SIZE	0.016	0.566	0.566	0.566	0.566	0.566
LVG	-1.600	0.000	0.000	0.000	0.000	0.000
MAN	0.220	0.010	0.010	0.010	0.010	0.010
INT	0.021	0.484	0.484	0.484	0.484	0.484
PRV	0.0002	0.619	0.619	0.619	0.619	0.619
STA	-0.064	0.0001	0.0001	0.0001	0.0001	0.0001
C	0.689	0.110	0.110	0.110	0.110	0.110
F Statistic	10.885		13.374		12.357	
	(0.000)		(0.000)		(0.000)	
Durbin-Watson statistic	1.821		1.852		1.871	
Limer test (Chow test):	65.140		66.170		65.684	
	(0.000)		(0.000)		(0.000)	
Hausman test	29.462		6.812		13.329	
	(0.001)		(0.006)		(0.020)	
R-squared	0.698		0.739		0.724	

*Source: research findings.

Given the low probability levels for negative coefficients in both growth (-0.228) and maturity (-0.307), results indicate a statistically significant negative relationship between inventory management and company performance during these stages. Moreover, considering the low probability level for positive coefficients in decline (0.308), results demonstrate a statistically significant positive relationship between inventory management and company performance during this stage.

The findings further indicate that among the control variables included in the regression, there are statistically significant negative relationships between financial leverage and state ownership with company performance across all three stages: growth (-1.600), maturity (-1.654), and decline (-1.624). Additionally, there are positive and statistically significant relationships between managerial ownership and company performance across all three stages: growth (0.220), maturity (0.254), and decline (0.281). However, no significant relationships were found between company size, institutional ownership, or private ownership with company performance across any of the three stages.

5 | Conclusion

This research aims to investigate the impact of inventory management on company performance, specifically focusing on ROA and ROE across different life cycle stages using the Panel Data method over the period from 2019 to 2023 for 192 firms listed on the Tehran Stock Exchange. The findings presented that inventory management significantly influences financial performance metrics. The results indicate that while effective inventory management can enhance ROE, its relationship with ROA appears more complex, suggesting potential inefficiencies in larger firms.

In *Approach 1*, a one-unit increase in inventory management is associated with a slight decrease in ROA, highlighting an inverse relationship. This finding suggests that while inventory management is essential, its direct impact on asset returns may not be as pronounced as expected. Conversely, managerial ownership positively correlates with ROA, indicating that higher stakes for managers can enhance asset efficiency. In *Approach 2*, however, an increase in inventory management leads to a positive change in equity returns, suggesting that effective inventory practices can significantly bolster shareholder value.

The analysis across different life cycle stages reveals that during growth and maturity phases, there exists a statistically significant negative relationship between inventory management and performance metrics. This finding underscores the challenges firms face in optimizing inventory levels during these periods. However, during the decline phase, a positive relationship emerges, indicating that effective inventory management can mitigate performance losses.

Additionally, control variables such as financial leverage consistently demonstrate negative correlations with both ROA and ROE across all life cycle stages. This suggests that higher debt levels adversely affect company performance, reinforcing the need for firms to manage their capital structures prudently. Managerial ownership also shows a positive impact across all stages, emphasizing the importance of aligning managerial incentives with company performance.

Overall, this study contributes to the existing literature by providing robust evidence of the intricate relationships between inventory management and company performance metrics like ROA and ROE across various life cycle stages. The findings highlight the necessity for companies to adopt effective inventory management strategies tailored to their specific operational contexts to enhance financial performance. Future research could explore additional factors influencing these relationships or examine industry-specific dynamics to further enrich understanding in this critical area of business management.

Acknowledgments

The authors wish to convey their appreciation to the faculty and staff of the management and accounting faculty at the Islamic Azad University, Tonekabon Branch, for their assistance throughout this research. Additional thanks go to the peer reviewers for their valuable feedback and recommendations, which significantly enhanced the quality of this manuscript.

Author Contributions

Seyed Fakhreddin Fakhrhosseini initiated the study, developed the methodology, and oversaw the research. Rasoul Naserhojjati Rudsari handled data collection, conducted statistical analyses, and prepared the manuscript. Both authors reviewed and consented to the final version of the manuscript.

Funding

This research did not receive any specific financial support from public, commercial, or non-profit entities.

Data Availability

The datasets utilized and analyzed during this study can be requested from the corresponding author, subject to reasonable inquiries.

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