Cost Stickiness and Firm Performance: Evidence from Manufacturing Enterprises in China

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ABSTRACT

Understanding how costs behave relative to changes in activity is crucial to improving managerial decision-making and financial performance. This study investigated the relationship between cost stickiness and firm performance among manufacturing enterprises in China. Cost stickiness occurs when costs rise more quickly with an increase in sales but decrease more slowly when sales decline. Employing a descriptive–correlational design, the study used secondary financial data from 50 listed manufacturing firms over a five-year period (2018–2022). Results indicated that administrative, selling, and operating expenses exhibited significant stickiness (ranging from $\beta = -0.35$ to -0.12), and cost stickiness was negatively correlated with profitability (ROA: $r = -0.47$, $p < 0.01$). The findings highlight the importance of flexible cost management and managerial adaptability for sustaining firm performance under volatile market conditions.

Keywords: Cost stickiness, firm performance, managerial behavior, manufacturing enterprises, China

INTRODUCTION

Cost behavior analysis has traditionally assumed a linear relationship between cost and activity level. However, empirical evidence suggests that costs respond asymmetrically to sales fluctuations—a phenomenon known as cost stickiness (Anderson, Banker, & Janakiraman, 2003). Costs increase more when sales rise than they decrease when sales fall, primarily due to resource adjustment delays, labor hoarding, and managerial decisions that prioritize long-term stability (Weiss, 2010; Calleja, Steliaros, & Thomas, 2006).

In China's fast-evolving manufacturing sector, cost stickiness has become an important dimension of operational efficiency and financial resilience. The country's unique institutional environment—characterized by strong state influence, rapid technological upgrading, and demand volatility—makes it imperative to understand how cost behavior affects firm performance (Banker & Chen, 2006; Xu & Sim, 2017). Sticky costs may reflect both managerial prudence in preserving resources and inefficiency in cost control (Dierynck, Landsman, & Renders, 2012).

While studies on cost stickiness are abundant in Western contexts, limited evidence exists for China's manufacturing firms, especially in the post-pandemic economic landscape. This study, therefore, aims to address this research gap. Specifically, it investigates the degree of cost stickiness in different expense categories and its relationship with firm performance. It hypothesizes that higher cost stickiness is associated with lower firm performance.

METHODOLOGY

A descriptive–correlational design was employed to analyze the relationship between cost stickiness and firm performance. The study utilized secondary financial data from the annual reports of 50 publicly listed manufacturing companies in China covering five fiscal years (2018–2022). Firms were selected based on data completeness and continuous listing during the study period.

Dependent Variable: Firm performance, measured by Return on Assets (ROA) and Return on Equity (ROE). Independent Variable: Cost stickiness, computed using the Anderson et al. (2003) model:

$$\ln(\text{Cost}_t / \text{Cost}_{t-1}) = \alpha + \beta * \ln(\text{Sales}_t / \text{Sales}_{t-1}) + \varepsilon$$

where $\beta < 1$ when sales decrease indicates cost stickiness.

Descriptive statistics summarized cost ratios and performance indicators. Pearson correlation analysis was conducted to test the relationships between cost stickiness coefficients and firm performance metrics. Statistical significance was tested at the 0.05 level using SPSS version 27.

RESULTS AND DISCUSSION

Descriptive Statistics

The analysis revealed that cost stickiness coefficients ranged from –0.12 to –0.35 across expense categories, suggesting moderate cost rigidity (Table 1). Selling and administrative expenses showed the highest stickiness, implying that firms retain personnel and marketing expenditures despite revenue fluctuations—possibly to preserve customer relationships and market share.

Table 1. Descriptive Summary of Cost Stickiness by Expense Category

Expense Category	Mean Coefficient	Std. Dev.	Interpretation	
Selling Expenses		-0.35	0.09	High Stickiness
Administrative Expenses	-0.28		0.1	Moderate Stickiness
Operating Expenses		-0.25	0.12	Moderate Stickiness
Production Overheads		-0.12	0.07	Low Stickiness

These results are consistent with previous research showing that firms in emerging markets often exhibit stickier SG&A costs due to employment protection laws and long-term supplier contracts (Anderson et al., 2003; Chen, Lu, & Sougiannis, 2012).

Correlation Between Cost Stickiness and Firm Performance

Pearson correlation analysis revealed a significant negative correlation between cost stickiness and firm profitability (ROA: $r = –0.47$, $p < 0.01$; ROE: $r = –0.39$, $p < 0.05$) (Table 2).

Table 2. Correlation Between Cost Stickiness and Firm Performance

Variables	**ROA**	**ROE**	**Significance**
Cost Stickiness	-0.47**	-0.39*	Significant
*p < 0.05, **p < 0.01			

These findings confirm that rigid cost structures limit managerial flexibility and profitability during downturns (Weiss, 2010; Xu & Sim, 2017). However, moderate stickiness can also indicate strategic resource retention that supports rapid recovery when demand rebounds (Calleja et al., 2006).

DISCUSSION

The results affirm the dual nature of cost stickiness: while excessive rigidity reduces profitability during recessions, moderate stickiness may represent managerial foresight and investment in organizational capacity. Chinese manufacturing firms, operating within a regulated labor environment and guided by state policies on social stability, often maintain employment levels even in declining markets, leading to inherent cost asymmetry.

CONCLUSION AND RECOMMENDATIONS

The study concludes that cost stickiness exists among Chinese manufacturing enterprises and that higher degrees of stickiness negatively affect firm performance. Selling and administrative expenses are the most rigid cost components.

To improve financial resilience, firms should:

1. Implement cost-flexibility strategies, including variable compensation systems and flexible sourcing.
2. Integrate cost monitoring tools into management accounting systems to identify sticky patterns early.
3. Encourage data-driven decision-making to balance short-term efficiency and long-term competitiveness.
4. Conduct benchmarking analyses to compare cost behavior across sectors and market conditions.

These practices will help firms transform cost rigidity into adaptive capability, enhancing overall performance under fluctuating market conditions.

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