Asymmetric cost behavior : Does organization's life cycle matter?

An empirical study

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Abstract

This study investigates the impact of the organizational life cycle (OLC) on cost asymmetry, employing the Dickinson (2011) proxy measure for OLC. Additionally, Cost asymmetry is assessed using ABJ (2003) proxy measure. We utilize a sample of 48 industrial firms listed in Egypt over a 12-year period (2012-2023), resulting in 576 firm-year observations. The models are estimated using ordinary least squares (OLS) regression with fixed effects .The findings reveal that the impact of cost

asymmetry varies across different stages of an organization's life cycle. More specifically, incorporating an organization’s life cycle stage offers a deeper insight into cost behavior, as cost stickiness and managerial decision-making are closely tied to the firm’s developmental phase.

Keywords: Cost Asymmetry, Organization’s Life Cycle, Operational Costs .

الملخص:

تهدف الدراسة إلي قياس أثر دورة حياة الشركة علي السلوك غير المتماثل للتكاليف وذلك بالتطبيق على عينة من الشركات الصناعية المصرية المقيدة والمتداول أسهمها فى بورصة الأوراق الماليه المصرية وقد بلغ عددها ٤٨ شركة خلال الفترة من عام ٢٠١٢ حتى عام ٢٠٢٣، بواقع (٥٧٦) مشاهدة خلال فترة البحث، بإستثناء الشركات المالية والبنوك لما لها من طبيعة معاملات خاصة. تم تقدير النماذج باستخدام طريقة المربعات الصغرى العادية (OLS) مع استخدام منهجية التأثيرات الثابتة. وقد أشارت نتائج الدراسة إلي وجود أثر معنوي ودال احصائيا للمراحل المختلفة لدورة حياة الشركة علي السلوك الغير متماثل للتكاليف ،كما أن تأثير عدم تماثل التكاليف يختلف عبر المراحل المختلفة لدورة حياة الشركة. بشكل أكثر تحديدًا، وهذا الأثر يوفردليلا لضرورة دمج مراحل دورة حياة الشركة عند تقدير نموذج التكلفة كما انه يوفرفهمًا أعمق لسلوك التكاليف.

الكلمات المفتاحية: عدم تماثل سلوك التكلفة، دورة حياة الشركة، التكاليف التشغيلية.

1. Introduction and research problem

Asymmetric cost behavior, commonly referred to as "cost stickiness," is a phenomenon where costs do not decrease proportionally with declining activity levels but tend to increase more rapidly when activity levels rise (Anderson, et al., 2003). This asymmetry can be attributed to several factors, including managerial decision-making, resource adjustments, and external market conditions. In this context, an organization's life cycle play a pivotal role in shaping how costs behave asymmetrically. Specifically, firms at different stages of their life cycle-introduction, growth, maturity, and decline- face varying operational challenges and strategic priorities, which may influence the degree of cost stickiness (Bai et al.,2025).

The organizational life cycle theory posits that firms transition through distinct stages, each characterized by unique managerial focus and resource allocation strategies (Dickinson, 2011). During the introduction and growth stages, firms tend to prioritize expansion and capacity building, which might result in higher fixed costs and subsequently greater cost stickiness (ABJ, 2003). On the other hand, during the maturity and decline phases, cost structures may become more flexible as firms focus on efficiency and cost-cutting (Einhorn & Shust. ,2023). Thus, the stage of an organization's life cycle may

significantly affect how costs behave in response to changes in activity levels (Fodor et al.,2024).

While the impact of cost stickiness on organizational performance has been widely studied, there is limited empirical research examining whether the organization's life cycle influences this behavior. Understanding this relationship is critical for both academic scholars and practitioners, as it provides insights into how managers can adapt cost management strategies to the firm's current stage in its life cycle. By exploring this linkage, the present study aims to contribute to the literature on cost behavior and organizational life cycles by investigating whether an organization's life cycle stage moderates the extent of asymmetric cost behavior.

The phenomenon of asymmetric cost behavior has received considerable attention in accounting and management literature. However, despite significant advancements in understanding cost stickiness, the role of the organization's life cycle in moderating this behavior remains underexplored. Specifically, it is unclear whether firms at different stages of their life cycle such as introduction, growth, maturity, or decline experience varying degrees of cost asymmetry. This gap in the literature highlights the need for a more nuanced understanding of how life cycle dynamics influence cost behavior.

The research problem addressed by this study is, therefore, twofold: First, does the degree of asymmetric cost behavior vary across different stages of an organization's life cycle? Second, how do managerial decisions, resource allocations, and external factors at each life cycle stage contribute to variations in cost stickiness? By answering these questions, this research seeks to fill an important gap in the literature and offer practical insights for managers in developing cost management strategies tailored to their organization's life cycle stage.

2. Literature review and hypotheses development

2.1. Literature review

The phenomenon of cost Asymmetry is a complex interplay of economic, agency, and psychological factors, supported by robust empirical evidence. Understanding these dynamics helps firms and researchers assess managerial behavior and improve cost management strategies under varying economic conditions. life cycle of a firm plays a crucial role in shaping its cost structure, as evidenced by recent research studies. Zhou and Chen (2011) delved into the formation mechanism of knowledge rigidity within firms, highlighting how sunk costs can hinder decision-making processes at different stages of the firm's life cycle. This dynamic nature of knowledge rigidities underscores the complexities that firms face in managing costs and operations efficiently.

Yi et al., (2013) analyzed the impact of the corporate life cycle on the cost asymmetry of steel companies in Korea. The sample for this study was selected from major steel companies around the world from 1976 to 2003, as listed in the World Steel Dynamics book. The sample size was 1,134 companies. The study found that companies in the decline stage showed a smaller increase in cost element input due to an increase in sales compared to those in the growth stage when sales increase. This means that upward rigidity is stronger in declining companies than in growing companies. The study also verified that downward cost rigidity in growth-stage companies appears stronger compared to those in decline-stage companies.

On the other hand , Hong (2020) explored the relationship between business strategy and cost behavior within the framework of the corporate life cycle, using data from Korean listed firms (2000-2019). The research examined how business strategy influences cost behavior and further analyzes this effect conditional upon the corporate life cycle. Firms are classified as Prospectors or Defenders based on a business strategy index derived from six financial indicators, while corporate life cycle stages are identified through cash flow patterns. The findings indicated that Prospector firms exhibit stronger cost stickiness, particularly in the Introduction phase, suggesting that firms with aggressive growth strategies are more likely to retain costs despite revenue declines.

Moreover, a study by Voulkou (2023) examined the asymmetric cost behavior of shipping firms across different life cycle stages, and its relationship with operating performance. The data sample for this study consists of chronological panel data comprising 32,888 observations from Greek and internationally based shipping and parallel shipping companies over the 1992-2022 period . The findings indicate that shipping firms generally exhibit a symmetrical cost pattern, though SG&A costs display anti-stickiness in the Growth, Mature, and Shake-out phases, while operating expenses show stickiness in the Introduction phase and anti-stickiness in Growth and Mature phases. The study utilizes panel data to analyze cost asymmetry in shipping firms, revealing that asymmetric cost behavior is not generally observed but is present in specific life cycle stages.

2.2. Hypotheses development

The purpose of this study is to investigate the impact of organization life cycle on cost asymmetry. A distinct hypothesis for average cost stickiness is not included, as it is widely recognized and has been repeatedly confirmed in prior research. Nevertheless, the model used in the current study will determine whether the operating costs of Egyptian firms exhibit sticky cost behavior. Empirical evidence supports the notion that startups and growth-stage companies face different cost asymmetry challenges compared to mature and declining firms.

By adjusting cost management strategies to their specific life cycle stage, organizations can better navigate demand uncertainty and optimize their cost structures. Balakrishnan et al. (2011) explained that managers may prioritize flexibility and rapid adjustment to capture market opportunities, resulting in variable costs that are less sticky in the introduction phase. Chen et al. (2015) suggested that introduction and growth-phase companies exhibit more flexible cost structures but face significant cost asymmetry due to high fixed costs associated with rapid expansion. In the growth phase, risk aversion and commitment to expansion can lead to cost asymmetry, as managers are reluctant to reduce costs during demand downturns.

Anderson et al. (2003) conjectured that at the maturity phase, managers establish long-term contracts and fixed investments that create operational constraints that enhance cost asymmetry during demand uncertainty. Balakrishnan et al. (2011) exposed that at the maturity phase, conservatism and resistance to change in established firms contribute to higher cost asymmetry under demand uncertainty. Although at the decline phase, managers exert efforts to downsize and reduce operational scale, and that can lead to partial mitigation of cost asymmetry, some fixed costs remain challenging to adjust (Kama & Weiss, 2013).

Balakrishnan et al. (2011) explained that at the introduction stage, firms have high flexibility in their cost structures, with a greater proportion of variable costs that can be adjusted based on demand fluctuations. Investment in the growth stage is significant in product development as market entry creates high fixed costs, potentially increasing cost rigidity when demand is uncertain (Chen et al., 2015). On the other hand, at the growth stage, rapid expansion may lead to increased fixed costs, such as new facilities and workforce, which may not be easily reduced when demand decreases, resulting in cost rigidity (Anderson et al., 2003). Companies in the growth stage often scale operations quickly, resulting in cost rigidity due to the inability to scale down as rapidly in response to demand uncertainty (Chen et al., 2012).

Firms in the maturity stage have established processes and cost structures, often leading to higher fixed costs and greater cost rigidity in the face of demand uncertainty (Balakrishnan et al., 2011). Despite relative market stability, unexpected demand fluctuations can still create cost rigidity, as mature firms are less agile in adjusting their cost structures (Kama & Weiss, 2013). Organizations in the decline stage focus on cost reduction and efficiency improvements, which may reduce cost rigidity as they seek to lower fixed costs (Anderson et al., 2003). Although efforts to liquidate assets and downsize can mitigate cost rigidity, some fixed costs remain resistant to reduction due to contractual

obligations and long-term investments (Chen et al., 2012). Therefore, this will lead to the hypothesis:

H_1 :Different stages of an organization's life cycle, exerts different influences degree on cost asymmetry.

3. Research design and sample description

The current research will test the effect of organization life cycle on cost asymmetry using a surrogate measure from financial statements as applied by (Dickinson , 2011) to measure organization life cycle.

3.1. Research design

- **Organization life cycle (OLC) measurement**

In order to measure organization life cycle , the empirical proxy for it, which is applied by (Dickinson ,2011) is used. This systematic approach allows researchers and practitioners to analyze firms' lifecycle behaviors and their implications for risk, profitability, and growth. Dickinson's (2011) classification of a company's life cycle is grounded in the systematic patterns of cash flows generated from three key activities: operational, investment, and financing. These cash flow patterns provide an empirical basis for distinguishing different stages of a company's life cycle. Tables 1 (presumably from Dickinson's study)

illustrate how variations in cash flow dynamics correspond to specific life cycle stages.

Tables 1: **Dickinson's classification of Life Cycle Stages** [1]

CF / Phases	1 intro	2 Growth	3 Mature	4 Shake-out	5 Shake-out	6 Shake-out	7 decline	8 decline
Predicted Sign								
Cash flows from operations	-	+	+	-	+	+	-	-
Cash flows from investing	+	-	-	-	+	+	+	+
Cash flows from financing	+	+	-	-	+	-	+	-

Dickinson Cash Flow model (2011) as follows:

1. Birth: If CFO< 0, (INVCF) > 0, (FINCF) > 0
2. Growth: If CFO> 0, (INVCF) < 0, (FINCF) > 0
3. Maturity: If CFO> 0, (INVCF) < 0, (FINCF) < 0
4. Shake-out: If CFO > 0 or < 0, (INVCF) > 0 or < 0, (FINCF) > 0 or < 0
5. decline: If CFO < 0 or < 0, (INVCF) > 0 or < 0, (FINCF) > 0 or < 0

- **Estimation model**

Based on the estimated OLC coefficient, a dummy OLC is constructed. By interacting the OLC coefficient dummy with the cost stickiness coefficient in ABJ (2003) cost asymmetry model, the effect of OLC on cost stickiness is tested. The following model is applied:

$$\log\left[\frac{OPER_{i,t}}{OPER_{i,t-1}}\right] = \beta 0 + \beta 1 \cdot \log\left[\frac{Sales_{i,t}}{Sales_{i,t-1}}\right] + \beta 2 \cdot DecreaseDummy_{i,t} \cdot \log\left[\frac{Sales_{i,t}}{Sales_{i,t-1}}\right] + +(\beta 3BIRTH + \beta 4GROWTH + \beta 5MATURE + \beta 6\,SHAKE + \beta 7\,DECLINE + \beta 8\,controls) \cdot Dec_{i,t} \cdot \log\left[\frac{Sales_{i,t}}{Sales_{i,t-1}}\right] + \varepsilon_{i,t}$$

Where:

ΔLn OPER $_{i,\,t}$ = log-change in deflated operating expenses ratio of firm (i) in year (t) relative to year (t-1).

ΔLn $Sales_{i,t}$ = log-change in deflated sales revenue of firm (i) in year (t) relative to year (t-1).

Dec $_{i,\,t}$ = equals 1 if deflated sales revenue of firm (i) decreased between year t and year (t-1), 0 otherwise

β_0 = Constant,

β_1:β_8 = Coefficient,

$Birth_{i,t}$ = equals 1 if firms are classified as introduction level followed by Dickinson's (2011) cash flow-based life-cycle classification, 0 otherwise.,

$Growth_{i,t}$ = equals 1 if firms are classified as growth level followed by Dickinson's (2011) cash flow-based life-cycle classification, 0 otherwise.

$Mature_{i,t}$ = equals 1 if firms are classified as mature level followed by Dickinson's (2011) cash flow-based life-cycle classification, 0 otherwise.

$Shake_{i,t}$ = equals 1 if firms are classified as shake-out level followed by Dickinson's (2011) cash flow-based life-cycle classification, 0 otherwise.

$Decline_{i,t}$ = equals 1 if firms are classified as decline level followed by Dickinson's (2011) cash flow-based life-cycle classification, 0 otherwise.

Controls: control varaiables

$\varepsilon_{i,t}$ = random error

3.2. Sample description

The study population includes all Egyptian companies listed on the Egyptian Stock Exchange, which belong to industrial sector. The sample comprises 576 observations from 48 industrial firms, covering a twelve-year period from 2012 to 2023. Following (Banker et al, 2014 "b"), to correct for inflation ,sales revenue and operational expenses are deflated using the GDP[2] defelator . The data are organized as panel data model and analyzed using the least squares method at the section concerning the examination of stickiness in the Egyptian environment. The regression is carried out using Eviews version 12. Table (2) presents the study sample, organized according to the sectoral distribution of the Egyptian Stock Exchange

[2] GDP and GDP deflator data were sourced from The World Bank's official website: http://www.worldbank.org/. These datasets provide reliable and comprehensive information necessary for economic analysis

Table (2): Sectoral Distribution of the Study Sample

Serial	Sector	Sample size											
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	Food, Beverages and Tobacco	15	15	15	15	15	15	15	15	15	15	15	15
2	Basic Resources	10	10	10	10	10	10	10	10	10	10	10	10
3	Building Materials	5	5	5	5	5	5	5	5	5	5	5	5
4	Contracting & Construction Engineering	4	4	4	4	4	4	4	4	4	4	4	4
5	Paper & Packaging	4	4	4	4	4	4	4	4	4	4	4	4
6	Health Care & Pharmaceuticals	3	3	3	3	3	3	3	3	3	3	3	3
7	Textile & Durables	3	3	3	3	3	3	3	3	3	3	3	3
8	Industrial Goods, Services and Automobiles	2	2	2	2	2	2	2	2	2	2	2	2
9	Trade & Distributors	1	1	1	1	1	1	1	1	1	1	1	1
10	Energy & Support Services	1	1	1	1	1	1	1	1	1	1	1	1
Total number of sample companies per year		48	48	48	48	48	48	48	48	48	48	48	48
Number of manufacturing listed companies		94	94	94	94	94	94	94	94	94	94	94	94
Ratio of sample companies to total companies		51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%

Table No. (3) shows the descriptive statistics of the study variables as follows:

Table3: Descriptive Statistics

Variable	Descriptive statistics					
	Observation	**Minimum**	**Maximum**	**Mean**	**Median**	**Std. Dev.**
Dependent Variable (Cost Asymmetry)						
ΔOPER	576	-2.6968	3.1995	0.0164	0.1769	0.7739
Independent Variables						
ΔREV	576	-5.7326	3.4379	0.0184	0.1794	0.8117
Moderator Variables (organization life cycle)						
BIRTH	576	0	1	0.1285	0	0.3349
GROWTH	576	0	1	0.1302	0	0.3368
MATURE	576	0	1	0.3872	0	0.4875
SHAKE	576	0	1	0.2014	0	0.4014
DECLINE	576	0	1	0.1493	0	0.3567
Control Variable						
SIZE	576	17.25132	24.68250	20.63084	20.56699	1.44904
LOG_ASSET_INS	576	-2.5839	6.7842	0.3543	0.2106	1.1482
GDP	576	2.1855	6.5878	4.0248	3.9700	1.2772
LEV	576	0.0050	4.7132	0.5230	0.4812	0.3966
ROA	576	-1.4452	1.4575	0.0508	0.0585	0.1506
SUCC	576	0	1	0.3628	0	0.4812

descriptive statistics presented in Table 3 provide a detailed overview of the variables included in the analysis, encompassing dependent, independent, moderator, and control

variables. These statistics offer valuable insights into the characteristics of the data, including measures of central tendency, dispersion, and range.

The dependent variable, Cost Asymmetry (ΔOPER), exhibits a wide range from -2.6968 to 3.1995, with a mean of 0.0164 and a median of 0.1769. The standard deviation of 0.7739 suggests moderate variability, indicating that cost asymmetry fluctuates substantially across observations. The independent variable, ΔREV, similarly spans a broad range, from -5.7326 to 3.4379, with a mean of 0.0184 and a median of 0.1794. The standard deviation of 0.8117 reveals slightly higher variability, suggesting that revenue changes are more dispersed.

Regarding the moderator variables that reflect different stages of the organizational lifecycle, all are binary in nature, as indicated by minimum and maximum values of 0 and 1. Among these, MATURE demonstrates the highest mean value (0.3872) and a standard deviation of 0.4875, signifying that a considerable proportion of organizations are in the mature stage, with variability almost equally distributed between the two binary states. In contrast, BIRTH and GROWTH exhibit similar mean values, at 0.1285 and 0.1302, respectively, with standard deviations of approximately 0.335. These results suggest that fewer organizations fall into the early lifecycle stages compared to the mature phase. Additionally, SHAKE and DECLINE have moderate mean values

of 0.2014 and 0.1493, accompanied by standard deviations of 0.4014 and 0.3567, respectively. This pattern reflects that while the shakeout and decline stages occur, they are less prevalent compared to the mature phase.

The control variables further enhance the understanding of the dataset. The variable SIZE shows relatively consistent values, ranging from 17.25132 to 24.68250, with a mean of 20.63084 and a standard deviation of 1.44904. This indicates that most organizations in the dataset have comparable sizes. On the other hand, LOG_ASSET_INS, which ranges widely from -2.5839 to 6.7842, has a mean of 0.3543 and a standard deviation of 1.1482, pointing to considerable variation in intangible assets. Similarly, GDP, with a range from 2.1855 to 6.5878 and a mean of 4.0248, displays moderate variability as evidenced by its standard deviation of 1.2772. The variable LEV shows a smaller range, from 0.0050 to 4.7132, with a mean of 0.5230 and a standard deviation of 0.3966, suggesting less dispersion in leverage ratios across firms. Meanwhile, ROA, with a range of -1.4452 to 1.4575 and a standard deviation of 0.1506, indicates relatively stable profitability levels, albeit with some outliers. Lastly, SUCC, a binary variable, has a mean of 0.3628 and a standard deviation of 0.4812, which reveals that approximately one-third of the organizations in the dataset are classified as successful.

Table 4 :results of regression according to organization life cyc

varaibles	birth			growth			mature			Shake-out			decline		
	Coeff.	T-Statistic	Prob.	Coeff.	T-Statistic	Prob.	Coeff.	T-Statistic	Prob.	Coeff.	T-Statistic	Prob Prob.	Coeff.	T-Statistic	Prob.
C	0.1523	2.171	0.033	0.1596	1.255	0.21	0.1627	2.16	0.03	0.197	4.00	0.000	0.2011	1.531	0.12
REV	0.6340	6.306	0	0.9107	5.204	0	0.5431	5.22	0	0.627	9.43	0	0.612	2.705	0.00
DEC	-0.0741	-0.61	0.541	-0.789	-4.78	0	-0.392	-3.64	0.00	-0.21	-3.03	0.003	-0.504	-2.950	0.00
DEC*REV	0.3598	1.904	0.061	-0.690	-3.62	0.00	0.0958	0.67	0.49	0.339	3.77	0.000	-0.235	-0.93	0.35
Sample size	74	74	74	77	77	77	223	223	223	116	116	116	86	86	86
All sample	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576
F-statistic	97.68	97.68	97.68	79.86	79.86	79.86	128.9	128.9	128.9	455.6	455.6	455.6	47.08	47.08	47.0
R-squared	0.807	0.807	0.807	0.771	0.771	0.771	0.638	0.638	0.638	0.924	0.924	0.924	0.632	0.632	0.63

4. Results

The researchers employed a multiple regression model to investigate the impact of organization life cycle on cost asymmetry within manufacturing Egyptian joint stock companies. Parameters for the regression model were estimated using the Ordinary Least Squares (OLS) method under a random effects framework. The OLS method was chosen due to its ability to produce linear and unbiased estimators, which are also the

most efficient with the lowest variance compared to other linear and unbiased estimation methods .The statistical analysis of the study's data was conducted using E-Views version 12. E-Views is recognized for its ability to differentiate between various time periods of observations and its robustness in managing data under conditions of economic and political crises and fluctuations

The results highlight the role of the interaction term (DEC*REV) as an indicator of cost asymmetry, demonstrating that the degree of asymmetry varies across different stages of the firm's life cycle. In the birth stage, the interaction coefficient (p=0.061) is marginally significant, indicating an anti-sticky cost behavior. This suggests that, during the initial phase of operations, firms exhibit greater flexibility in resource allocation. Specifically, the findings reveal that a 1% increase in revenue leads to a 0.6340% increase in operational costs, whereas a 1% decrease in revenue results in a 0.9938% decrease in operational costs (0.6340 + 0.3598). This disproportionate reduction in costs in response to declining revenues implies that managers are more inclined to cut resources rather than retain them when confronted with demand uncertainty. This behavior reflects a cautious managerial approach, where resource adjustments are made proactively in response to revenue declines until greater certainty about the persistence of reduced demand is established, thereby contributing to the observed anti-sticky cost behavior .

In addition growth phase exhibits the most pronounced cost stickiness, with a strongly negative interaction coefficient (-0.690, p = 0.000), indicating that firms in this phase experience high cost stickiness due to increased resource commitments and expansion-related investments, making cost reductions challenging when revenue declines. In the mature stage, the interaction term (0.0958, p = 0.49) is statistically insignificant, suggesting that cost asymmetry stabilizes as firms optimize resource efficiency and maintain a balance between cost adjustments and revenue fluctuations. During the shake-out stage, the interaction coefficient (0.339, p = 0.000) is positive and highly significant, reflecting anti-stickiness and a shift in cost behavior where firms become more responsive to revenue declines, possibly due to restructuring efforts or efficiency-driven decision-making. However, in the decline stage, the interaction term (-0.235, p = 0.35) loses statistical significance, indicating that cost asymmetry weakens, as firms may be forced to cut costs regardless of revenue trends. The overall pattern suggests that cost asymmetry is most pronounced in the growth and shake-out stages, where managerial discretion over cost adjustments plays a critical role. These findings emphasize the importance of considering an organization’s life cycle stage when analyzing cost behavior, as firms in different phases exhibit varying degrees of cost stickiness, impacting financial decision-making and strategic cost management. The high R-squared and F-

statistic values across models affirm the robustness of these findings, providing critical insights into how revenue and discretionary expenses interplay throughout the organizational lifecycle

5. Conclusion

We examine the effect of organization life cycle on cost asymmetry. The Dikinson (2011) proxy measure of OLC is used as an interaction variable with cost stickiness coefficient to reflect OLC on cost asymmetry. Consistent with our hypothesis, the results show that Different stages of an organization's life cycle, exerts different influences degree on cost asymmetry.

In sum, we document that managers taking the stages of organization’s life cycle into account when analyzing the cost asymmetry model provides a more nuanced and accurate assessment of cost behavior, as the organization’s position in its life cycle and the inherent stickiness of costs can significantly impact financial decision-making and strategic planning.

Our research has some limitations. First, the sample size afforded in industrial Egyptian market is very small in comparison with other asymmetric cost behavior researches. Second, managers do not have full control over decisions to reduce or maintain slack resources when sales decline.

Future research may explore our findings through another measure of cost asymmetry for each company not to the whole sample. Testing whether the type of the firm e.g. business or governmental sector could affect the relation between organization life cycle and cost asymmetry is another possible future research avenue.

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