

# The Predictive Power of Cost Stickiness on the Long- Term Firm Value: A Management Expectation Theory<sup>1</sup>

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## ABSTRACT

*Sticky-cost behavior is considered a complex phenomenon and a great challenge for practice. Since then, the management of the firm must prudently expect future demand to make rational decisions regarding whether to keep or drop the committed resources, which in turn increases or decreases the degree of cost stickiness. Therefore, the main purpose of this research is to investigate the impact of sticky cost behavior on predicting the future value of the firm. The data of the current study were obtained from the most actively traded non-financial 84 firms listed on EGX-100 from 2013–2018. The sample selection is based on quarterly data on revenue and costs to measure the cost stickiness (3311 observations). A Panel data analysis was used to test the research proposal model. The results of this research implied that sticky cost behavior with its different components has a positive impact on the firm's value in the long run, and this result perfectly coincides with the management expectations lens, which implies that the optimistic expectations of management regarding future demand encourage managers to keep slack resources and bear the extra sticky costs associated with this decision. Then, based on these optimistic expectations, in the long run, both behavior and performance will be positively influenced, which enhances the overall long-term value of the firm.*

**Keywords:** Cost stickiness; long-term firm value; management expectations; sticky cost behavior.

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## **I. INTRODUCTION AND RESEARCH PROBLEM**

The contemporary business environment is characterized by fierce competition, economic disturbances, technological advancements, and internal and external organizational constraints. A firm that needs to generate profits and sustain its growth in such an environment must crucially adopt relevant and reliable information for planning, controlling, and making informed decisions. Subsequently, the firm has to decompose its costs into appropriate categories, based on cost behavior patterns. The traditional accounting models categorize costs as either fixed, variable, mixed, or step costs concerning the changes in activity level. On the other hand, other researchers, for example, Noreen & Soderstrom (1994) and Anderson et al. (2003) examined the degree of complexity between costs and activity level, and they emphasized that cost classifications are more complex than those proposed by the traditional accounting models. In addition, costs exhibit asymmetric cost behavior with upward and downward changes in activity levels, known as the sticky cost behavior phenomenon.

Sticky cost behavior includes two types of cost behavior, which are cost stickiness and anti-cost stickiness. Cost stickiness means that costs do not fall as much when revenues decrease as they escalate when revenues increase (Anderson et al., 2003). On the other hand, costs are said to be sticky if they increase less when activity rises than when activity drops by an equivalent amount (Weiss, 2010). Cost stickiness gains its importance since it sheds light on a novel perspective of cost behavior rather than that projected by the traditional cost behavior model. It enables firms to better control and manage their costs. So, this enables various groups of stakeholders to make more rational business decisions. Managers can decide whether to keep or drop the idle resources, which would impact the cost of capital and the overall firm value (Venieris et al., 2015; Banker et al., 2012). While owners and creditors can better assess firms' different risks associated with sticky cost behavior (Mandour, 2021; Yan, 2021). Whereas analysts can better predict the overall firm's value associated with sticky cost patterns (Wu & Wilson, 2022; Kim & Prather-Kinsey, 2010). Additionally, Grant & Pollock (2011) emphasized the importance of crafting a 'hook' to capture the reader's attention and motivate them to engage with the study. This study focuses on the unique context of Egypt and the implications of cost stickiness for long-term firm value could provide a compelling hook for researchers interested in

management accounting in emerging economies, as well as practitioners seeking to develop effective cost management strategies. So, cost stickiness has a pivotal role in exploring the firms' overall value.

Therefore, the motivation for our research comes from the crucial need to understand the impact of cost stickiness on long-term firm value, particularly in emerging economies such as Egypt. While cost stickiness has been extensively studied in developed economies, its implications for emerging economies remain largely unexplored. Specifically, Egypt a unique context for studying cost sticky behavior: Egypt is an emerging economy, which means it is still developing and going through a period of rapid growth and change (Mohieldin et al., 2019). This presents a unique opportunity to study cost sticky behavior in a context different from the more developed economies where most of the research in this area has been conducted. In addition, Egypt has a specific cultural and social context that may influence the behavior of managers and their expectations of future profitability. For example, the concept of *wasta* (i.e., the use of personal connections or influence to achieve goals) is prevalent in Egypt (Mohamed & Mohamad, 2011) and may affect the decisions of managers in relation to cost management and investment. Hence, understanding the impact of cost stickiness on long-term firm value in Egypt can have important implications for management practice and policymaking in the region.

There are growing number of studies that focus on sticky cost behavior. The first group of studies primarily focuses on providing additional evidence on the existence of sticky cost behavior. For example, Norren & Soderstorm (1997), Anderson et al. (2007), Calleja et al. (2006), and He et al. (2010). While the second group of studies addresses the determinants that cause sticky cost behavior (Subramaniam & Watson, 2016; Banker et al., 2013; Balakrishnan & Gruca, 2008). Whereas the third group of studies focuses on the different internal and external corporate mechanisms that limit sticky cost behavior (e.g., Ibrahim, 2018, Zhou et al., 2018, Liang et al., 2014, and Chen et al., 2012). Finally, the fourth group of studies investigates the effects of sticky cost behavior on earnings forecasts, market reactions, and earnings management, for example, Dierynck et al. (2012), Kim & Prather-Kinsey (2010), and Weiss (2010). However, despite their importance, there is little evidence available in the literature that addresses the long-term impacts of cost stickiness on firms' overall value,

particularly in the African context. This gap in the literature is significant, as managers need to know whether cost stickiness impacts the long-term success of the Egyptian firms.

## **2. RESEARCH QUESTION**

We go beyond the earlier studies that adopt a short-term perspective to examine the impact of additional costs associated with cost-stickiness behavior and ignore the potential long-term impacts associated with its existence. Many previous studies adopt the agency cost perspective, for example, Bugeja et al. (2015), Guenther et al. (2014), and Chen et al. (2012) emphasize that management benefits from keeping its resources idle to maximize their own benefits and, hence, increase the cost stickiness. In other words, this perspective confirms that cost stickiness reflects inefficient resource allocation and should be curbed. Therefore, our research questions are as follows:

- To what extent does the cost stickiness behavior affect long-term firm value?
- How can an optimistic management perspective on future profitability mitigate the negative concerns associated with cost stickiness behavior and its impact on long-term company value?

## **3. RESEARCH OBJECTIVES**

The main focus of this research is to propose an optimistic management expectations perspective to alleviate these negative concerns, and we demonstrate how an optimistic management expectations perspective of future profitability can successfully address and supports the results of the relationship between cost stickiness and the overall long-term value of the firm. So, this research contributes to research in management accounting by examining the predictive power of cost stickiness on long-term firm value using a management expectations theory framework. This approach provides insights into the underlying mechanisms that drive cost stickiness and its impact on firm value, which can inform the development of effective cost management strategies.

More specifically, we use the ordinary least square (OLS) regression model to better estimate the cost stickiness and the overall long-term value of the firm relationship which is a novel approach in the management accounting literature. Furthermore, this research focuses on the unique context of Egypt makes it a valuable contribution to research in North Africa. Hence, this research provides

insights into the implications of cost stickiness for long-term firm value in an emerging economy, which is a significant area of interest for policymakers, academics, and practitioners. To the best of our knowledge, the findings of this research can potentially inform the development of cost management strategies that are tailored to enhance long-term firm value in the specific context of emerging economies, thereby contributing to the development of management accounting research in North Africa.

Our central findings in this research imply that sticky cost behavior, with its various components, has a positive impact on the future long-term value of a firm. In addition, this result completely coincides with the management expectations theory, which suggests that optimistic expectations of management about future demand led managers to keep slack resources and bear the various sticky costs associated with these decisions. Consequently, in the long-term, these decisions would favorably influence both the behavior and performance, which in turn would enhance the overall long-term value of the firm. We also found that our findings are still valid after considering variables that may have been omitted.

Our research shows that firms with sticky cost behavior tend to have a brighter long-term future. This aligns with the management expectations theory, which suggests that optimistic management expectations about future demand can lead to the retention of slack resources and the acceptance of sticky costs. Over time, these decisions can have a positive impact on firm behavior and performance, ultimately enhancing the overall long-term value of the company. Furthermore, our findings remain robust even after controlling for other variables that could have affected the results.

The organization of the research is as follows. The next pattern, section 2, presents our theoretical framework and hypothesis development. Section 3 frames our research method and model specification. Section 4 details data sources and research samples. Section 5 discusses the main empirical results and implications drawn from statistical analysis. We conclude in section 6 with some research limitations and some suggestions for future research.

#### 4. THEORETICAL FRAMEWORK

Deliberate management decisions regarding resource adjustment are at the core of sticky cost behavior (Habib & Costa, 2022; Anderson et al., 2003). As a result, various theoretical frameworks, such as agency cost and resource adjustment theories, were used to investigate sticky cost behavior.

From the agency's perspective, cost stickiness may occur because of irrational operations by management (Yang et al., 2020). Chen et al. (2012) acknowledged the fact that with the separation of ownership and management controls, the management may decide to maximize their gains at the expense of shareholders' interests, for example, empire-building behavior or expansion of firm size to increase power, influence, and personal enjoyment. Therefore, cost stickiness from the agency cost lens does not have a positive impact on a firm's value (Yang et al., 2020).

From a resource adjustment perspective, many costs arise from management's deliberate resource commitment decisions. Since resources are committed, it is difficult to reduce resources without incurring large adjustment costs (Habib & Costa, 2022; Priantana & Sayuthi, 2020). The study of Balakrishnan & Gruca (2008) confirmed that greater cost stickiness improves the core competency of firms.

Although these theories are useful to explore various sticky cost behavior topics, we go beyond these earlier studies that are short-term oriented and address the long-term impact of cost stickiness on the firms' overall value from an alternative theoretical perspective, which is the management expectations theory.

No doubt, the management expectations theory was first introduced by Victor Vroom in 1964. This theory is centered on the idea that the person is motivated to the extent that he expects that his efforts will lead to acceptable performance and this performance will be rewarded, which is referred to as instrumentality, and the value of rewards is high, which is known as valence (Lunenburg, 2011). In other words, this theory is based on three main assumptions, which are expectancy, instrumentality, and valence.

Various studies apply management expectations theory in the area of sticky cost behavior. The study by Chen et al. (2019) investigated the effect of management expectations on symmetric cost behavior. While the study of Banker, explored

the role of management expectations theory in describing the management decisions relating to the capacity of activity resources that lead to costs, Whereas Venieris, et al. (2015) examined the firms' view regarding the intangible related economic sacrifices impacts on the stickiness of selling, general, and administrative costs.

The potential rationale for the superiority of management expectations theory is that, first, management expectations theory recognizes the role of managerial discretion in decision-making, which is not accounted for in agency theory. According to Jensen (1993), agency theory assumes that managers always act in the best interest of shareholders, while managers may have personal goals and preferences that affect their decisions. Second, management expectations theory is focused on long-term value creation, while agency theory and resource adjustment theory may be more focused on short-term gains. According to Porter (1992), sustainable competitive advantage requires investments in resources and capabilities over time, which may not yield immediate benefits but can create long-term value for shareholders. Third and last, management expectations theory considers the specific context in which the firm operates, such as industry dynamics, competitive pressures, and macroeconomic conditions. This recognition of contextual factors is important because it acknowledges that the strategies and decisions that are effective in one context may not be effective in another (Gupta & Govindarajan, 1984).

The management expectations theory suggests that the careful assessment of future demand influences the managers' decisions about holding or adjusting the committed resources (Guenther et al., 2014). This means that when managers have optimistic expectations about future demand, they tend to hold slack resources during the current period of decreasing demand. They believe that such a decrease in demand is temporary (Venieris et al., 2015; Banker & Dmitri, 2014; Banker et al., 2014). Accordingly, this theory emphasises that expectations affect behavior significantly (Yeşilkaya & Ylldiz, 2022). On the contrary, the traditional cost behavior model assumes that changes in the relevant cost drivers automatically drive costs (Banker et al., 2012).

According to these studies, researchers can conclude that there is little evidence available in the literature regarding the application and use of management expectations theory in the interconnected areas of cost stickiness and future

firms' value. In the current study, we attempt to take a step on that path and present management expectations theory as an analytical framework that provides an opportunity to investigate such a relationship. From the above theoretical arguments, it can be concluded that the effect of cost stickiness on a firm's value has three possible theoretical underpinnings, which are agency cost theory, resource adjustments theory, and managerial expectations theory. From an agency theory perspective, cost stickiness is always a result of management's irrational decisions and needs to be eliminated. However, from resource adjustments and management expectation

perspectives, managers may have rational reasoning beyond retaining such sticky costs. First, they may not prefer to incur additional adjustment costs because such resources are already committed. Second, they may anticipate a future increase in sales volume, so they retain it. As a result, managers should carefully weigh the short- and long-term costs and benefits of cost stickiness before deciding whether to keep or drop it. Overall, management expectations theory provides a compelling and realistic framework for understanding how managers make decisions about cost stickiness and its impact on a firm's value based on their expectations of future events.

## **5. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

An understanding of cost behavior patterns is important to researchers as well as internal and external users of financial statements. Since the various cost components represent the driving force for firms' profitability and sustainability. Hence, a large body of research literature all over the world documents the existence of asymmetric cost behavior.

In this section, we start by presenting the various empirical studies that demonstrate the existence of cost stickiness in the Egyptian context. The studies by Ibrahim (2018), Ibrahim & Ezat (2017), and Ibrahim (2015) demonstrated that asymmetric cost behavior is common among Egyptian-listed firms as their selling, general and administrative expenses, cost of goods sold, and total costs were sticky. In a similar vein, the study by Wahdan et al. (2021) revealed that costs respond asymmetrically to the changes in sales levels in six of the nine examined Egyptian sectors. These aforementioned studies focused on providing



supplementary evidence on the existence of cost stickiness in Egypt. However, they did not address the long-term impacts associated with its existence.

The different groups of stakeholders evaluate their firms' value based on the management's ability to plan and control the different costs. Hence, managers struggle to manage their resources efficiently to produce high-quality products or deliver services at competitive prices. Therefore, it is important to study the impact of the existence of symmetric cost behavior on the long-term value of firms.

There is little evidence available in the literature that examines such a relationship. As far as we know, the study conducted by Yang et al. (2020) only investigated such a relationship and concluded that cost stickiness has intertemporal heterogeneous impacts on the overall value of Chinese-listed firms. In addition, the study of Anderson et al., (2007) which confirmed a positive relationship between cost stickiness and future profitability. Since there is limited evidence in the literature that examines such a relationship, this means this relationship needs more attention and in-depth exploration, especially in developing countries. Consequently, this study centered on providing pioneering insights into the long-term consequences of cost stickiness as a signal to the degree to which the firm adjust their costs according to the changes in sales level on firms' long-term value. So, our first research hypothesis is proposed as follows:

**Hypothesis:** Cost stickiness behavior has a long-term impact on the overall value of firms.

Based on the above theoretical argument, we argue that managers' expectations about future earnings are influenced by their assessment of the firm's resources, capabilities, and the competitive environment in which the firm operates. The superiority of the management expectations theory is based on the idea that managers make decisions based on their expectations of future events, including future demand for the firm's products or services. This means that managers may be more likely to retain sticky costs when they have optimistic expectations about future demand, as they believe that any temporary decrease in demand will soon be reversed. On the other hand, when managers have pessimistic expectations about future demand, they may be more likely to reduce costs to prepare for a

potential decrease in revenue. This decision-making process aligns with the management expectations theory, which suggests that individuals are motivated by their expectations of future outcomes and rewards.

Therefore, we hypothesize that when cost stickiness is high, managers' expectations of future earnings will be more optimistic than they would be if cost stickiness were low. Therefore, our second research hypothesis is proposed as follows.

**Hypothesis<sub>2</sub>:** Cost stickiness behavior has a significant long-term impact on the overall value of firms and this impact is moderated by management expectations lens.

## **6. RESEARCH DESIGN**

### **6.1. SAMPLE SELECTION AND DATA**

To investigate the impact of cost stickiness behavior on long-run firm value, the most actively traded non-financial 84 firms listed on the Egyptian Stock Exchange (EGX-100) from the 2013–2018 period constitute the research sample. This research utilized data from the Egyptian listed firms. The reasons beyond selecting most actively traded firms as a necessary condition for the sample is that these firms tend to be more visible and have a higher impact on market prices and on the overall market performance (Lin, Ma, Malatesta, & Xuan, 2013; Hiebl, 2021). In addition, these firms regularly publish their data in their annual reports making it easier to collect and analyze data to achieve research purposes, and they are characterised as being the most actively traded firms for at least one year and were listed on the Egyptian Stock Exchange across the entire research period from the year 2013–2018.

The research period is limited to the 6 years from 2013 to 2018 for two main reasons. First, to examine the cost behavior beyond the COVID-19 crisis, since the COVID-19 crisis harshly hit the economies of firms all over the world, it also remarkably appeared in Egypt at the end of the first quarter of 2019. Second, to mitigate the negative consequences associated with the Arab Spring Revolutions that had significant impacts on the financial performance of firms operating in the Middle East and North Africa. The homogenous structure of the income statement among Egyptian listed firms provides insights into the effects of sticky cost behavior among the major cost components on the degree of accuracy of

analysts' earnings forecasts. The model of Weiss (2010) proposed a direct measurement model for calculating cost stickiness. In order to apply this model, revenue or cost continuously increased or decreased over the four quarters of the year needed to be excluded. AS a result, a total of 1059 observations were excluded. Therefore, the research sample consisted of 3311 observations.

The sample selection is based on the direct measurement method proposed by (Weiss, 2010), which requires quarterly data to calculate cost stickiness, and Egyptian-listed firms have been required to disclose quarterly reports since 2013, as this year represents the starting date for this research.

**6.2. THE MEASUREMENT OF COST STICKINESS:**

Prior research has mainly relied on two different methods to measure a firm's cost stickiness. The first one is offered by Anderson et al. (2003), who suggested the use of a change regression model. According to this model, the regression coefficient can only be used to measure the average cost stickiness of all samples. Hence, there is no way to determine the degree of cost stickiness for each company each year. The second one is presented by Weiss (2010), who developed a direct measurement model to measure cost stickiness within each sample firm. Since these two methods have different characteristics, most research that highlights the factors affecting cost stickiness prefers to adopt the Anderson et al., (2003) model, while Weiss (2010) model applied by the prior research that aimed to investigate the economic consequences of cost stickiness. Since the purpose of this research is to examine the impact of cost stickiness on firms' overall value, we refer to the (Weiss, 2010) model as the appropriate model for the purpose of calculating each firm's annual degree of cost stickiness. According to this model, cost stickiness is determined by comparing the logarithm of the ratio of the increase in cost for each unit of increase in revenue to the decrease in cost for each unit of decrease in revenue. The greater the result of the model's equation, the greater the cost stickiness. Below is a detailed description of the model:

$$STICKY_{i,t} = \log\left(\frac{\Delta COST}{\Delta SALE}\right)_{i,\bar{t}} - \log\left(\frac{\Delta COST}{\Delta SALE}\right)_{i,\underline{t}} \quad \text{Model (1)}$$

$$STICKY\_COGS_{i,t} = \log\left(\frac{\Delta COGS}{\Delta SALE}\right)_{i,\bar{t}} - \log\left(\frac{\Delta COGS}{\Delta SALE}\right)_{i,\underline{t}} \quad \text{Model (2)}$$

$$STICKY\_SGA_{i,t} = \log\left(\frac{\Delta SGA}{\Delta SALE}\right)_{i,\tau} - \log\left(\frac{\Delta SGA}{\Delta SALE}\right)_{i,\tau-1} \quad \text{Model (3)}$$

Where  $STICKY_{i,t}$  is a firm's degree of cost stickiness for the firm (i) in period t,  $\tau-(\tau+)$  represents the most recent quarter with a sales decrease (increase) over the last four quarters. Following the Weiss (2010) model, we define cost stickiness based on three different types of costs, including the costs which are different between sales revenues and income before extraordinary items, the cost of goods sold, and the SG&A. Through applying Weiss's model, we reach the firm-level cost stickiness (Cost\_Sticky, COGS\_Sticky, and SGA\_Sticky). After that, we can investigate the effect the cost stickiness has on the management earnings forecasts.  $\Delta SALE$  is the difference between the sales revenue of the quarter and the sales revenue of the previous quarter, and  $\Delta COST$  is the difference between the operating cost of the quarter and the operating cost of the previous quarter. Operating costs refer to all costs including the cost of goods sold, business tax and surcharges, selling expenses, administrative expenses, and financial expenses.

In model (1), when  $STICKY$  is higher than 0, it means that the increase in cost when the sales revenue rises is greater than the decrease in cost when sales revenue declines, thus the firm is subject to cost stickiness. When  $STICKY$  is lower than 0, it means the increase in cost when sales revenue rises is less than the decrease in cost when sales revenue declines, hence the firm is subject to cost anti-stickiness. In other words, the higher the sticky behavior result, the greater the cost of stickiness exist. Anderson et al., (2003) model presented an easy model to capture the degree of cost stickiness but it did not include other determinants of cost stickiness, so, we prefer to implement Weiss (2010) models to capture cost stickiness (Equations 1-3), for three reasons. First, Banker et al. (2014) suggested that Weiss (2010) extended model has advantages over investigating the consequences of cost stickiness presented in future profitability and firm value. Second, Weiss, (2010) model coincided the objective of our research through measuring the firm-level cost stickiness. However, Weiss model requires sample firms to experience both the increase and decrease in sales during the past four quarters, however this requirement reduces our sample size significantly. Model derived variables, presented in Cost\_Sticky, COGS\_Sticky, SGA\_Sticky, and

ABJ\_Sticky were adopted to measure the level of cost stickiness across our sample.

### 6.3. EMPIRICAL MODEL

Since the main objective of this research is to investigate the predictive power of cost stickiness behavior on the long run firms' overall value, a Panel data analysis (Fixed Effects / Random Effects model), based on the results of the Hausman test, has been adopted using a dataset covering all non-financial firms listed in EGX-100. Assuming that all hypothesised relationships are linear, we will explain the regression model.

Model (4) examines the effect of cost sickness behavior on firms' overall value, where firm value is measured by the market capitalization of the firm (the market value of the Egyptian firms shares). As explained in HI, the management of firms conserves cost stickiness for a long-term period, particularly with optimistic expectations of sales behavior (Yang et al., 2020; Wahdan et al., 2021; Wu & Wilson, 2022).

$$\begin{aligned}
 &FV_{iT} \\
 &= \alpha_0 + \beta_1 STICKY_{it} + \beta_2 Brd\ SIZ_{it} + \beta_3 INDEP_{it} + \beta_4 Dual_{it} \\
 &+ \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \beta_7 ROA_{it} + \beta_8 LIQ_{it} + \beta_9 Growth_{it} + Year_{FE} \\
 &+ Industry_{FE} + \varepsilon_{it} \quad \text{Model (4)}
 \end{aligned}$$

Where, FV is the firm value measured by the market value of firm's securities for firm i in period T. Subscript T represents t, t+1, t+2, and t+3, since this research questioned the long-term impact of cost stickiness on the overall firms' value. STICKY is the cost stickiness behavior for firm i in period t. Table (1) explains the other variables that capture firm-level characteristics. Previous research highly recommended controlling for board size; independence, and CEO duality (Yang et al., 2020; Eltambohy & Abdallah, 2022). Firm\_Size is an important variable, for the reason that large companies follow more conservative strategies to avoid any future risks, and they will be more cautious about future (Li, 2010) (Rogers et al., 2011). In addition, the authors consider financial leverage to control the credit crunch (Yekini et al., 2016) and control for other firm-specific characteristics that might affect positive tone, such as Growth, ROA, and LIQ, respectively (Li, 2010; Davis et al., 2015; Abdallah & Eltambohy, 2022). The current research also controls for other variables presented in the firm, industry,

and year-fixed effects that may drive sticky cost behavior. Table (1) indicates the variables' definitions in more detail.

In model (5), we examine the moderating effect of management expectations on the association between cost sickness behavior and firms' overall value. As explained above in H<sub>2</sub>, when cost stickiness is high, managers' expectations of future earnings will be more optimistic than they would be if cost stickiness were low. According to Anderson et al. (2003), to quantify management expectations, we can create a variable called "Man\_Expect" that represents whether the sales have declined for two consecutive years. If the sales decline for two consecutive years, indicating pessimistic expectations, we assign a value of 1 to "Man\_Expect." On the other hand, if the sales do not decline for two consecutive years, reflecting optimistic expectations, we assign a value of 0 to "Man\_Expect." This binary variable helps differentiate between managers' pessimistic and optimistic expectations regarding the firm's performance.

$$\begin{aligned}
 FV_{i,T} &= \alpha_0 + \beta_1 STICKY_{it} + \beta_2 Man\_Expect + \beta_3 STICKY * Man\_Expect \\
 &+ \beta_4 Brd\ SIZ_{it} + \beta_5 INDEP_{it} + \beta_6 Dual_{it} + \beta_7 SIZE_{it} + \beta_8 LEV_{it} \\
 &+ \beta_9 ROA_{it} + \beta_{10} LIQ_{it} + \beta_{11} Growth_{it} + Year_{FE} + Industry_{FE} \\
 &+ \varepsilon_{it} \quad \text{Model (5)}
 \end{aligned}$$

Where, Man\_Expect is the management pessimistic expectations measured as 1 if the sales declines for five consecutive years, and 0 Otherwise. Table (1) indicates the variables' definitions in more detail.

Table 1: Variables definitions and measurement

| Variables   | Acronym         | Variables Definition   |
|-------------|-----------------|--|
| FV          | Firm value      | The market value of a company (market capitalization), is calculated by multiplying a company's outstanding share by its current market price.   |
|             |                 | Alternative measure of firm value (e.g., Tobin's Q value = (market value of total shares + book value of debt) / book value of total assets).  |
| STICKY      | Cost stickiness | Measured using Weiss's model.<br>$STICKY_{i,t} = \log\left(\frac{\Delta COST}{\Delta SALE}\right)_{i,\tau} - \log\left(\frac{\Delta COST}{\Delta SALE}\right)_{i,\tau-}$ , Where $\tau-(\tau+)$ represents the most recent quarter with a sales decrease (increase) over the last four quarters. |
| STICKY_COGS | sticky Cost of  | $STICKY_{i,t} = \log\left(\frac{\Delta COGS}{\Delta SALE}\right)_{i,\tau} - \log\left(\frac{\Delta COGS}{\Delta SALE}\right)_{i,\tau-}$ , where  |

|   |   |  |
|---|---|--|
|   | goods sold                                      | $\tau-(\tau+)$ represents the most recent quarter with a sales decrease (increase) over the last four quarters.  |
| STICKY_SGA  | Sticky selling and general administrative costs | $STICKY_{i,t} = \log\left(\frac{\Delta SGA}{\Delta SALE}\right)_{i,\tau} - \log\left(\frac{\Delta SGA}{\Delta SALE}\right)_{i,\tau-4}$ , where $\tau-(\tau+)$ represents the most recent quarter with a sales decrease (increase) over the last four quarters. |
| Man_Expect  | Management expectations                         | is the management pessimistic expectations measured as 1 if the sales declines for five consecutive years, and 0 Otherwise.  |
| <b>Control variables (firm-level characteristics)</b> |   |  |
| Size  | Firm size                                       | The natural log of total assets.   |
| ROA   | Return on assets                                | % net income to Average total asset  |
| LEV   | Leverage  | % total debt to total assets   |
| Growth  | Sales Growth                                    | Current year's net sales or revenue/Last year's total sales or revenue-1) *100   |
| Brd_Size  | Board size                                      | Number of board members  |
| INDEP   | Board independence                              | % independent board members to the total members of the board of directors.  |
| Dual  | CEO Duality                                     | A dummy variable takes a value of one if the CEO is the chairperson and zero otherwise   |
| MAN_OWN   | Management ownership                            | the total shares owned by management/total shares of the firm  |
| TOP_OWN   | Shareholding ratio of the large shareholder     | = the share owned by the largest shareholder/total shares  |
| Cash_HOLD   | Cash holding ratio                              | (cash + financial assets held for trading) / total assets  |

## 7. EMPIRICAL RESULTS

### 7.1. DESCRIPTIVE STATISTICS AND CORRELATIONS

Table 2 presents a summary of the statistics for the relevant variables. The mean and median values of STICKY in our sample were 0.00814 and 0.02206, respectively. Whereas the mean and median value of STICKY\_COGS is 0.019804 and 0.00562. While the mean and median value of SAG\_STICKY is 0.028802 and -0.0039. These results indicate that managers tend to conserve cost stickiness along the different cost components presented in total costs, cost of goods sold and selling, general, and administrative costs for long periods of time.

The standard deviation of STICKY, STICKY\_COGS, and STICKY\_SGA in our sample is 0.50739, 0.47238 and, 0.74114, respectively, which indicates the existence of considerable variation among the firms' cost behavior.

**Table 2: Descriptive statistics for research variables**

|             | Obs. | Mean     | Min.     | Median   | Q1       | Q4       | Max      | Std. Dev. |
|-------------|------|----------|----------|----------|----------|----------|----------|-----------|
| TOBIN'S Q   | 504  | 0.934485 | 0        | 0.307797 | 0.956848 | 1.833759 | 78.43963 | 5.457021  |
| STICKY      | 504  | 0.00814  | -3.4680  | 0.02206  | 0.00479  | 0.02466  | 3.39822  | 0.50739   |
| STICKY_COGS | 504  | 0.019804 | -2.7108  | 0.00562  | 0.01230  | 0.04443  | 2.89102  | 0.47238   |
| STICKY_SAG  | 504  | 0.028802 | -4.1983  | -0.0039  | -0.0058  | 0.06013  | 4.42789  | 0.74114   |
| SIZE        | 504  | 8.791545 | 5.302554 | 8.86793  | 8.729133 | 8.780846 | 10.98351 | 0.958394  |
| ROA         | 504  | -0.28824 | -69.4963 | 0.085976 | -0.54696 | 0.073883 | 2.676503 | 5.385619  |
| LEV         | 504  | 0.327666 | 31.99591 | 0.032852 | 0.45657  | 0.201692 | -0.98627 | 2.483645  |
| Brd_Size    | 504  | 7.815476 | 17       | 8        | 7.806349 | 7.587302 | 3        | 2.544959  |
| INDEP       | 504  | 0.842971 | 8        | 0.714    | 0.889588 | 0.883722 | 0.2      | 1.135546  |
| DUAL        | 504  | 0.25     | 1        | 0        | 0        | 0        | 0        | 0.433443  |
| Growth      | 504  | 14172.45 | 592.34   | 1890591  | 192.07   | 3397.21  | -182029  | 201370.2  |

Table 3 shows the Person correlation matrix between the explanatory variables and their association with the firms' overall long-term value, to provide an initial correlation between them and to check for any multicollinearity among the tested variables. We conclude that STICKY, STICKY\_COGS, and STICK\_SGA all have positive and significant correlations with the overall long-term value of the Egyptian listed firms, and these results coincide with the results of the study of Yang et al. (2020). Also, these results support the arguments raised by the management expectations theory, which implies that the sensible assessment of future demand influences the expectations of managers regarding the future. So, if these expectations are optimistic, this will encourage managers to hold slack resources or unused capacity temporarily (Guenther et al., 2014), then in the long-term, these expectations will positively affect both the behaviors and the performance (Yeşilkaya & Yildiz, 2022). In addition, Brd\_SIZE, ROA, and LEV all has positive and significant correlation with the overall long-term value of the Egyptian listed firms. While, both DUAL and Growth have positive and significant. However, SIZE and INDEP both do not have any relationship with the firms' overall long-term value. Finally, the results show that the correlation coefficients of the exploratory variables are relatively low, this means there is not



any potential multicollinearity problem among the exploratory variables (Mahboub, 2019; Bassyouny et al., 2020; Abdallah & Eltambohy, 2022).

**Table 3: Correlation Matrix**

|                    | FV <sub>it+5</sub>      | STICKY                 | STICKY_COGS            | STICKY_SGA | Brd_SIZE               | INDEP                   |
|--------------------|-------------------------|------------------------|------------------------|------------|------------------------|-------------------------|
| FV <sub>it+5</sub> | 1                       |                        |                        |            |                        |                         |
| STICKY             | 0.2974 <sup>***</sup>   | 1                      |                        |            |                        |                         |
| STICKY_COGS        | 0.2177 <sup>***</sup>   | 0.17639 <sup>***</sup> | 1                      |            |                        |                         |
| STICK_SGA          | 0.4721 <sup>***</sup>   | -0.087345 <sup>†</sup> | 0.092894 <sup>†</sup>  | 1          |                        |                         |
| BRDSIZE            | -0.14498 <sup>***</sup> | -0.033957              | -0.040431              | -0.008801  | 1                      |                         |
| INDEP              | -0.017552               | 0.010077               | -0.022542              | 0.003673   | -0.18183 <sup>**</sup> | 1                       |
| DUAL               | -0.09148 <sup>†</sup>   | -0.041377              | -0.095933 <sup>†</sup> | -0.042021  | 0.11066 <sup>**</sup>  | 0.290029 <sup>***</sup> |
| SIZE               | 0.04242                 | 0.007391               | -0.00807               | 0.013752   | 0.13421 <sup>**</sup>  | 0.087091 <sup>†</sup>   |
| PROF               | 0.5953 <sup>***</sup>   | 0.05577                | 0.075172 <sup>†</sup>  | 0.014668   | 0.10455 <sup>**</sup>  | 0.019408                |
| LEV                | 0.27001 <sup>***</sup>  | 0.000929               | -0.036293              | -0.005737  | -0.058986              | 0.008836                |
| Growth             | 0.9004 <sup>†</sup>     | 0.14777 <sup>***</sup> | -0.021898              | -0.035326  | -0.000247              | -0.006275               |
|                    | DUAL                    | SIZE                   | PROF                   | LEV        | Growth                 |                         |
| FV <sub>it+5</sub> |                         |                        |                        |            |                        |                         |
| STICKY             |                         |                        |                        |            |                        |                         |
| STICKY_COGS        |                         |                        |                        |            |                        |                         |
| STICK_SGA          |                         |                        |                        |            |                        |                         |
| Brd_SIZE           |                         |                        |                        |            |                        |                         |
| INDEP              |                         |                        |                        |            |                        |                         |
| DUAL               | 1                       |                        |                        |            |                        |                         |
| SIZE               | 0.008092                | 1                      |                        |            |                        |                         |
| PROF               | 0.07972 <sup>†</sup>    | 0.10159 <sup>**</sup>  | 1                      |            |                        |                         |
| LEV                | -0.05526                | 0.077817 <sup>†</sup>  | -0.03348               | 1          |                        |                         |
| Growth             | 0.000228                | 0.052005               | 0.006219               | -0.0046    | 1                      |                         |

**7.2.MULTIVARIABLE RESULTS AND DISCUSSION**

Based on the results of the Hausman test, which indicated that the p-value is greater than 0.05 (Chi-square is 3.268471 and P-Value equals 0.9527), we can conclude that the fixed effects model is the preferred choice. This suggests that there is no significant random effect that needs to be accounted for in the model.

Therefore, we recommend using the fixed effects model for our analysis. This model assumes that the fixed effects for each data unit are constant over time, individuals, sections, or countries. By controlling for these fixed effects, you can

better examine the effects of the independent variables on the dependent variable while accounting for any constant differences between the units.

Table 4 reports the regression results for the long-term impacts of cost stickiness on firms' overall value using the fixed effects model. The main results imply that the coefficients of cost stickiness *STICKY*, *STICKY\_COGS*, and *STICKY\_SGA*, are 0.245, 0.180, and 0.025, respectively, which means they are all significantly positive at a significance level of 1%. However, *Brd\_SIZE* is significantly negative at a significance level of 1%. *INDEP* are -0.1176, -0.0463, and -0.2688 respectively, also *Growth* is significantly negative in model (1) at a significance level 5%. *SIZE* and *LEV* are negatively associated with long-term value of the firm in case of Sticky cost behavior however, these relationships are insignificant. On the other hand, *ROA*, and *DUAL* do not have any significant relationship with the firms' long-term value.

These results confirm to some extent the study of Yang et al. (2020), since the results show that cost stickiness has a positive and significant long-term impact on firms' overall value. These results also match the optimistic expectations theory, which emphasizes that the optimistic expectations of management positively influence the future behavior and performance of the firms' which in turn positively impacts the firms' overall value.

Column (4) in Table (4) indicates the results of the moderation effect of management expectations on the relationship between sticky cost behavior and long-term firm value. Based on the results, it can be concluded that *STICKY* cost behavior has a significant and positive impact on the long-term firm value with coefficient of 0.3364 and t-value of 5.102, and this impact as explained above in  $H_2$ , increases when the managers' expectations of future earnings are more optimistic than they would be if cost stickiness were low. These results support the prior studies and the theoretical framework that when cost stickiness is high, managers' expectations of future earnings will be more optimistic than they would be if cost stickiness were low (Anderson et al., 2003; Yang et al., 2020).

**Table 4: Regression analysis of the long-term impact of cost stickiness on firm value.**

| Market value <sub>it+5</sub> | Expected Sign | Model (1)                              | Model (2)                              | Model (3)                             | Model (4)<br>Moderation effect          |
|------------------------------|---------------|--|--|---------------------------------------|---|
| STICKY <sub>t</sub>          | +             | 0.245474 <sup>***</sup><br>(4.053603)  |  |                                       | 0.336437 <sup>***</sup><br>(5.102568)   |
| STICKY_COGS <sub>t</sub>     | +             |  | 0.180791 <sup>**</sup><br>(2.573879)   |                                       |   |
| STICKY_SGA <sub>t</sub>      | +             |  |  | 0.025578<br>(0.634382)                |   |
| Man_Expect                   | +             |  |  |                                       | 0.018231<br>(0.310881)                  |
| STICKY* Man_Expect           | +             |  |  |                                       | 0.229391 <sup>***</sup><br>(2.840081)   |
| SIZE                         | +             | -5.61E-05<br>(-0.000845)               | -0.021343<br>(-0.273131)               | -0.015490<br>(-0.197652)              | 0.019276<br>(0.298355)                  |
| ROA                          | +             | 0.007059<br>(1.365121)                 | 0.007671<br>(1.344018)                 | 0.006174<br>(1.075330)                | 0.007097<br>(1.387824)                  |
| LEV                          | +             | -0.011523<br>(-1.024814)               | -0.007732<br>(-0.489771)               | -0.13592 <sup>**</sup><br>(-6.92074)  | -0.011902 <sup>*</sup><br>(-1.660281)   |
| Brd_SIZE                     | +             | 0.016966 <sup>*</sup><br>(1.950851)    | 0.264749 <sup>*</sup><br>(1.685435)    | 0.006028 <sup>**</sup><br>(4.127439)  | 0.009728<br>(0.604154)                  |
| INDEP                        | +             | -0.117647 <sup>**</sup><br>(-1.97656)  | -0.046399 <sup>**</sup><br>(-1.922792) | -0.268880 <sup>*</sup><br>(-1.675524) | -0.125531 <sup>*</sup><br>(-1.630365)   |
| DUAL                         | +             | 0.064769<br>(0.441259)                 | -1.64E-07<br>(-1.587172)               | -0.052445<br>(-0.324843)              | 0.074066<br>(0.514399)                  |
| Growth                       | +             | -1.68E-07 <sup>**</sup><br>(-1.828228) | -0.002358<br>(-0.180965)               | -1.21E-07<br>(-1.170833)              | -2.67E-07 <sup>***</sup><br>(-2.516906) |
| Constant                     | +             | 1.871062 <sup>***</sup><br>(3.055974)  | 2.430282 <sup>***</sup><br>(3.395878)  | 2.366937 <sup>***</sup><br>(3.295746) | 1.757804 <sup>***</sup><br>(2.948603)   |
| Year FE                      |               | YES                                    | YES                                    | YES                                   | YES                                     |
| Industry FE                  |               | YES                                    | YES                                    | YES                                   | YES                                     |
| Adj. R-squared               |               | 0.37993                                | 0.434851                               | 0.284425                              | 0.418480                                |
| VIF                          |               | 1.612728                               | 1.769444                               | 1.397477                              | 1.719631                                |
| Obs.                         |               | 504                                    | 420                                    | 420                                   | 504                                     |

Note: P-values are in parentheses. \*\*\*, \*\*, \* represents significance level at 1%, 5%, and 10% respectively. Variable definitions are in Table 1.

## 8. ENDOGENEITY EFFECT

### 8.1 ENDOGENEITY CONCERNS CAUSED BY OMITTED VARIABLES BIAS

When examining the impact of cost stickiness on firm value, this paper may have omitted some factors affecting firm value, such as ownership structure. In order to alleviate the endogenous problems caused by such omitted variables, we further control the influence of the management's shareholding ratio, the public shareholding ratio, and the cash holding ratio. We re-regress model (4) with controlling of ownership structure and cash holding and the results are shown in Table 5. The results indicate that the coefficient of STICKY<sub>t</sub>, STOCKY\_COGS, and STICKY\_SGA in column (1) to (3) are significantly positive at the significance level of 5%. The results remain consistent with the previous

conclusion, which further indicates that the research conclusion is robust. As this analysis confirms the main results that cost stickiness has a positive impact on firm value in the long-term. Moreover, it confirms the main findings that sticky cost of goods sold and selling and general administrative costs, have predictive power of firm value on the long run, meaning that it can be used in helping stakeholders in predicting future firm value.

Table 5: Endogeneity effect (omitted variables bias)

| Market value <sub>it+5</sub> | Expected Sign | Model (1)                             | Model (2)                             | Model (3)                             |
|------------------------------|---------------|---------------------------------------|---------------------------------------|---------------------------------------|
| STICKY <sub>t</sub>          | +             | 0.17931 <sup>**</sup><br>(2.73782)    |                                       |                                       |
| STICKY_COGS <sub>t</sub>     | +             |                                       | 0.18048 <sup>**</sup><br>(2.7761)     |                                       |
| STICKY_SGA <sub>t</sub>      | +             |                                       |                                       | 0.08248 <sup>*</sup><br>(1.69891)     |
| MAN_OWN                      | +             | -0.0133 <sup>**</sup><br>(-2.80299)   | -0.01379 <sup>**</sup><br>(-2.52407)  | -0.01369 <sup>**</sup><br>(-3.17165)  |
| TOP_OWN                      | +             | 0.059084 <sup>*</sup><br>(2.27626)    | 0.052647<br>(1.889784)                | 0.049754<br>(2.533143)                |
| Cash_HOLD                    | +             | 0.01162 <sup>***</sup><br>(9.20358)   | 0.01412<br>(-2.35505)                 | -0.01397 <sup>**</sup><br>(-3.40653)  |
| Brd_SIZE                     | +             | -0.04531 <sup>*</sup><br>(-1.81703)   | -0.04914<br>(-1.77576)                | -0.0494 <sup>**</sup><br>(-2.73131)   |
| INDEP                        | +             | -0.06756 <sup>*</sup><br>(-2.10187)   | -0.07624 <sup>**</sup><br>(-2.12299)  | -0.07772 <sup>**</sup><br>(-3.58987)  |
| DUAL                         | +             | -0.34355 <sup>*</sup><br>(-1.87125)   | -0.37818 <sup>*</sup><br>(-1.76248)   | -0.39324 <sup>*</sup><br>(-2.52257)   |
| SIZE                         | +             | -0.21858 <sup>**</sup><br>(-3.43751)  | -0.20078 <sup>**</sup><br>(-3.07924)  | -0.19186 <sup>**</sup><br>(-4.07065)  |
| ROA                          | +             | -0.02868 <sup>***</sup><br>(-9.06727) | -0.02851 <sup>***</sup><br>(-8.35462) | -0.02966 <sup>***</sup><br>(-11.7851) |
| LIQ                          | +             | 0.017507 <sup>*</sup><br>(1.81774)    | 0.021595 <sup>*</sup><br>(1.940059)   | 0.022118 <sup>**</sup><br>(2.574428)  |
| LEV                          | +             | -0.01298 <sup>**</sup><br>(-3.42254)  | -0.01348 <sup>**</sup><br>(-3.06488)  | -0.0118 <sup>***</sup><br>(-3.47733)  |
| Growth                       | +             | -5.600008<br>(-0.39607)               | -8.85E-08<br>(-0.42735)               | -6.200008<br>(-0.2753)                |
| Constant                     | +             | 3.27025 <sup>***</sup><br>(4.136518)  | 3.296339 <sup>**</sup><br>(3.80112)   | 3.241424 <sup>***</sup><br>(5.002624) |
| Year FE                      |               | YES                                   | YES                                   | YES                                   |
| Industry FE                  |               | YES                                   | YES                                   | YES                                   |
| Adj. R-squared               |               | 0.265592                              | 0.281995                              | 0.279979                              |
| VIF                          |               | 1.361649                              | 1.392747                              | 1.388848                              |
| Obs.                         |               | 504                                   | 420                                   | 420                                   |

Note: P-values are in parentheses. \*\*\*, \*\*, \* represents significance level at 1%, 5%, and 10% respectively. Variable definitions are in Table 1.

### 8.2. ROBUSTNESS TEST (ALTERNATIVE MEASURE FOR FIRM VALUE)

We use an alternative measure for future firm value in order to account for endogeneity problems related to measurement errors and as a robustness test of our main findings. While we used the market value of shares in our main analysis as a proxy of long-term firm value, we used the Tobin’s Q as an alternative proxy to measure future firm value. The results in Table 6 support our main result that STICKY is positively and significantly associated with the long-term firm value. Moreover, our robustness analyses confirm that the sticky cost of goods sold and sticky selling and administrative costs, have the power to predict the long-term firm value, which is consistent with the main results of our analysis. Moreover, the additional analysis supports the moderation effect of management expectations on the association between cost stickiness and long-term firm value.

Table 6: Robustness analysis (Alternative measure for firm value)

| TOBIN'S Q <sub>it+5</sub> | Expected Sign | Model (1)                               | Model (2)                               | Model (3)                               | Model (4)<br>Moderation effect        |
|---------------------------|---------------|---|---|---|---------------------------------------|
| STICKY <sub>t</sub>       | +             | 0.105277 <sup>***</sup><br>(12.15788)   |   |   | 0.07276 <sup>***</sup><br>(3.99844)   |
| STICKY_COGS <sub>t</sub>  | +             |   | 0.055952 <sup>***</sup><br>(3.749103)   |   |                                       |
| STICKY_SAG <sub>t</sub>   | +             |   |   | 0.014549<br>(1.473611)                  |                                       |
| Man_Expect                | +             |   |   |   | 0.030938 <sup>†</sup><br>(1.651557)   |
| STICKY* Man_Expect        | +             |   |   |   | 0.0179<br>(0.8326)                    |
| SIZE                      | +             | 0.130656 <sup>***</sup><br>(9.491959)   | 0.111653 <sup>***</sup><br>(4.669093)   | 0.096647 <sup>***</sup><br>(3.535381)   | 0.129394 <sup>***</sup><br>(6.554986) |
| ROA                       | +             | 0.016723<br>(1.011220)                  | -0.000255<br>(-0.013562)                | -0.018600<br>(-1.078618)                | -0.0046<br>(-0.25805)                 |
| LIQ                       | +             | -0.000395<br>(-1.167096)                | -0.000622 <sup>***</sup><br>(-3.239211) | -0.000715 <sup>***</sup><br>(-3.742268) | -0.0004<br>(-1.30881)                 |
| LEV                       | +             | -0.070808 <sup>**</sup><br>(-2.126351)  | -0.035399 <sup>*</sup><br>(-1.907429)   | -0.041656 <sup>*</sup><br>(-1.930368)   | -0.09012 <sup>*</sup><br>(-2.12703)   |
| Brd_SIZE                  | +             | -0.024316 <sup>***</sup><br>(-5.513488) | 0.012473 <sup>**</sup><br>(0.80876)     | -0.014822 <sup>***</sup><br>(-3.044194) | -0.01441 <sup>**</sup><br>(-2.53881)  |
| INDEP                     | +             | -0.018273 <sup>*</sup><br>(-1.644078)   | -0.015275 <sup>***</sup><br>(-2.882973) | -0.011474 <sup>**</sup><br>(-1.890595)  | -0.01854<br>(-1.47772)                |
| DUAL                      | +             | 0.093654<br>(1.360197)                  | 0.081187<br>(1.0835839)                 | (0.075631<br>(1.017255)                 | 0.110314 <sup>*</sup><br>(1.638823)   |
| Growth                    | +             | 3.80008<br>(1.250005)                   | 4.670008 <sup>***</sup><br>(2.269955)   | 3.420008 <sup>†</sup><br>(1.637923)     | 6.05E-09<br>(0.176306)                |
| Constant                  | +             | -0.355199 <sup>**</sup><br>(-3.084036)  | -0.264898 <sup>*</sup><br>(1.62250)     | -0.147100 <sup>***</sup><br>(-0.609165) | -0.43992 <sup>**</sup><br>(-2.43957)  |
| Year FE                   |               | YES                                     | YES                                     | YES                                     | YES                                   |
| Industry FE               |               | YES                                     | YES                                     | YES                                     | YES                                   |
| Adj. R-squared            |               | 0.485709                                | 0.601318                                | 0.627415                                | 0.486446                              |
| VIF                       |               | 1.944424                                | 2.508264                                | 2.683951                                | 1.9472148                             |
| Obs.                      |               | 420                                     | 504                                     | 420                                     | 504                                   |

Note: P-values are in parentheses. \*\*\*, \*\*, \* represents significance level at 1%, 5%, and 10% respectively. Variable definitions are in Table 1.

## 9. SUMMARY AND CONCLUSION

Sticky cost behavior has been proven as a complex phenomenon that requires specific attention from management to adequately understand the current situation and then rationally anticipate the firm's demand. To this end, this research investigates the impact of sticky cost behavior on predicting the future value of the firm. Our central findings in this research imply that sticky cost behavior, with its various components, has a positive impact on the future long-term value of a firm. In addition, this result completely coincides with the management expectations theory, which suggests that optimistic expectations of management about future demand led managers to keep slack resources and bear the various sticky costs associated with these decisions. Consequently, in the long-term, these decisions would favorably influence both the behavior and performance, which in turn would enhance the overall long-term value of the firm. We also found that our findings are still valid after considering variables that may have been omitted.

Our research shows that firms with sticky cost behavior tend to have a brighter long-term future. This aligns with the management expectations theory, which suggests that optimistic management expectations about future demand can lead to the retention of slack resources and the acceptance of sticky costs. Over time, these decisions can have a positive impact on firm behavior and performance, ultimately enhancing the overall long-term value of the company. Furthermore, our findings remain robust even after controlling for other variables that could have affected the results.

This research offers several important implications for managers, investors, and analysts. For managers, they should rationally estimate and plan the various costs based on the future expectations of the firm regarding the degree of the fluctuations in the level of economic growth. For investors, they should reasonably evaluate the pros and cons of sticky cost behavior from a long-term rather than a short-term perspective. For analysts, they should carefully understand the idea that sticky cost behavior does not always reflect the inefficiency of the firm or the failure of management to control costs. For example, the study of Guenther et al. (2014) explained the idea that the ratio of SG&A to sales is used to measure the level of operating efficiency, so the increase in this ratio indicates inefficiency in the firm's operations. However, based on

the results of our research, sticky cost behavior may have a positive impact on the long-term value of the firm.

This research admits several limitations and opens avenues for future research. First, this research did not consider the period of the COVID-19 pandemic, so future research may consider this period, since this period is characterized by high uncertainty, which may lead to different results. Second, this research did not consider the properties of sticky cost behavior; hence, future research may focus on investigating the degree of increase or decline in cost stickiness during the years of analysis. Third, this research considers various internal and external variables to investigate such a relationship. Future research may develop a research sample that focuses only on a certain industry and investigates the impact of sticky cost behavior on the overall industry prosperity.

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## تحليل القدرة التنبؤية لتأثير لزوجة التكاليف على قيمة الشركة في المدى الطويل: منظور نظرية توقعات الإدارة

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### ملخص البحث باللغة العربية

يشكل سلوك لزوجة التكاليف ظاهرة معقدة وتحديًا كبيرًا للممارسة العملية. ومن ثم يجب على إدارة الشركة أن تتوقع بحذر الطلب المستقبلي لاتخاذ قرارات منطقية بشأن ما إذا كان يجب الاحتفاظ بالموارد الملزمة أم تخفيضها، والتي بدورها تزيد أو تقلل من درجة لزوجة التكاليف. لذا يتمثل الهدف الرئيسي لهذا البحث في دراسة مدى تأثير لزوجة التكاليف على توقع القيمة المستقبلية للشركة. وقد ارتكزت عينة الدراسة على الشركات غير المالية الأكثر نشاطًا في مؤشر EGX-100 في الفترة من 2013 إلى 2018. وقد تم اختيار العينة بناءً على البيانات الفترية حول الإيرادات والتكاليف لقياس التصاق التكاليف (3311 ملاحظة). وقد أظهرت نتائج هذا البحث أن لزوجة التكاليف بمكوناته المختلفة لها تأثير إيجابي على قيمة الشركة على المدى الطويل، وتتفق هذا النتيجة تمامًا مع منظور توقعات الإدارة، والذي يشير إلى أن التوقعات المتفائلة للإدارة بشأن الطلب المستقبلي تشجع المديرين على الاحتفاظ بالموارد الفائضة وتحمل التكاليف الإضافية المرتبطة بهذا القرار. وبناءً على هذه التوقعات المتفائلة، في المدى الطويل، سيتأثر الأداء بشكل إيجابي، مما يعزز القيمة الإجمالية طويلة الأمد للشركة.

**الكلمات الدالة:** لزوجة التكاليف، قيمة الشركة على المدى الطويل، توقعات الإدارة، سلوك لزوجة التكاليف.

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