

BOARD COMMITTEE'S CHARACTERISTICS AND SELLING, GENERAL AND ADMINISTRATIVE COST BEHAVIOR: EVIDENCE FROM PAKISTAN

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ARTICLE INFO	ABSTRACT
<p><i>Article History:</i> Received: 10 Dec 2019 Revised: 15 Feb 2020 Accepted: 15 May 2020 Available Online: 30 Jun 2020</p> <hr/> <p><i>Keywords:</i> Corporate Governance, Audit Committee, Remuneration Committee, Cost Asymmetry, Cost Stickiness, Cost Anti-Stickiness.</p> <hr/> <p><i>JEL Classification:</i> D73, K23</p>	<p>This study aims to provide further evidence on asymmetric cost behavior from one of the emerging economies, Pakistan. The study provides also empirical evidence on the potential impact of board committee's characteristics on nature and magnitude of asymmetric cost behavior. This study develops three multiple regression models through the use of panel data fixed model to examine the behavior of Selling, General and Administration cost (SG&A) and the influence of board committee's characteristics and other control variables in a sample of 86 listed companies during 2014-2018. The analysis provides evidence on SG&A asymmetric behavior, where the analysis finds that SG&A increase by rupees 0.20 but decrease by rupees 1.17 for an equivalent activity change of 1 rupee. These findings are inconsistent with the traditional assumption that views costs as behaving in a linear fashion. Moreover, the study also reveals that firm-year observations with Average Number of Members in Committee (ANMC) overlapped members in Remuneration and Audit Committee (OMC) Board Compensation (BC) exhibit cost asymmetry. However, higher economic growth and institutional ownership found to exhibit greater cost stickiness. The findings of this study offer new evidence on SG&A asymmetric cost behavior from an emerging economy. Additionally, the findings of the study bridge a large gap in literature on the association among corporate governance and SG&A asymmetric cost behavior.</p>

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1. INTRODUCTION

The classical cost model ($y=a+bx$) explained when volume/activity changes then costs change accordingly. Costs are expected to react symmetrically with respect to activity/volume change. Traditional cost behavior models describe the difference while having variation in the cost driver's level. These costs behave symmetrically; represents that, variant in the variables costs is equally proportionate to the level of cost drivers. However, fixed cost do not respond to the variation in the cost driver's level. Recent studies have shown that costs can be kept asymmetrical. That is, costs can react differently to changes in activity, up or down. Such costs are said to be sticky. They increase more to increase activity than they decrease when activity decreases by an equal amount (Anderson *et al.*, 2003). Costs that increase less when the activity increases than decrease when the activity decreases by an equal amount is known as anti-stickiness (Wiess, 2010; Balakrishnan *et al.*, 2014). A recent study found that behavior of COGS was sticky in Pakistan. It increased by around 1% per 1% increase in sale revenue, but decreased only 0.88% per 1% decreased in sale revenue (Shafique & Ali, 2020). In another study, conducted in Egypt, that COGS behave sticky. It rise 1.05% per 1% increase in sales revenue and it decreased about 0.85% with 1% activity change (Ibrahim, 2018). Ibrahim (2015) proved in his another study that selling general & administration (SG&A) behave sticky.

From the perspective of strategic management, managers have to know that how costs respond when decisions are made about informed product to form and to calculate output (Lanen *et al.*, 2011). Likewise, from the side of investors, they rely on the audited annual financial reports published by the management. These reports are prepared on presented information about cost behavior determinants. Besides, cost behavior predicting is an essential part of earnings prediction from the perspective of financial analysts (Weiss, 2010). In this regard, appropriate suggestion may be corporate governance (CG). An effective CG system influences the decisions of managers and moderates managerial opportunism (Chen *et al.*, 2012). On behalf of shareholders, the board members and audit committees are responsible for monitoring and controlling the decisions of the managers. Accordingly, they could have a positive

influence on managers' cost behavior decisions. It is argued that strong CG can minimize the cost stickiness level or may closer to the optimum level of cost reaction in response of activity changed (Chen *et al.*, 2012). Furthermore, strong CG minimize the magnitude of asymmetric cost behavior more than the weak CG (Chen *et al.*, 2012; Pichetkun, 2012), which suggests that the CG system may decrease cost stickiness. The main pillar of the corporate governance are audit committee, compensation committee, and nomination committee (Shukla, 2008). Florackis and Ozkan (2008) found that executive remuneration plays an important role in reducing agency costs.

Only few studies are conducted in Middle East and Arab Region (Abu-Serdaneh, 2014; Ibrahim, 2018). Only one research is conducted in Pakistan (Shafique & Ali, 2020). More research is needed in developing economies Like; Pakistan. Research could consider other types of board committees, such as strategy-related committees which play a strategic role in advising the board of directors on important business decisions (Ibrahim, 2018; Shafique & Ali, 2020). There are few studies conducted on overlapping of members in audit committee and human resource and remuneration committee (Habib & Bhuiyan, 2018) and with relationship with asymmetric cost behavior (Shafique & Ali, 2020) If overlapping membership is profitable, is a bigger overlap may be better (Chandar *et al.*, 2012). More research is required to assess the association of management incentives with cost behavior (Ibrahim, 2018). However, it is also noticed that there is paucity in research which consist on observation the association between corporate governance mechanism and asymmetric cost behavior especially different board characteristics. Accordingly, this study would like to contribute by examining the asymmetric cost behavior of Pakistani firms. It will also provide evidence of cost behavior in different context; emerging economies context. Furthermore this study extend the literature of correlation of CG with asymmetric cost behavior. However, this study helps in finding the relationship managerial incentives and asymmetric cost behavior which is examined by a few studies. This study aims to examine how SG&A cost in Pakistan behave asymmetrically? And to examine how board's committees structured and managerial incentives could affect the SG&A asymmetric behavior. This research enhances the literature by investigating possible cost-stickiness solutions in addition to Chen *et al.* (2012)'s work, which interprets how CG could influence SG&A's stickiness of US firms. This research confirms Chen *et al.* (2012)'s study that would help to alleviate cost stickiness by effective CG. This study does, however, contribute by investigating the asymmetric behavior of SG&A. In addition to above, this study also contribute by examining the influence of CG on asymmetric behavior of SG&A. Furthermore, this study is one of the earliest and rarest studies in Pakistan examining asymmetric cost behavior.

The result of this research will be beneficial for researcher and practitioners. Firstly, this study confirmed the previous studies and made addition to it by examining the rigidity of developing countries such as Pakistan. This study encourages researchers to use interdisciplinary approaches, combining perspectives of management and financial accounting and exploring various scientific subjects. One similar topic is to study of the relationship between Pakistani companies on the register of companies and revenue management. Secondly, it is more convenient for the practitioner to consider lost costs when calculating changes in the average cost. There is extensive and thorough research in the field of corporate governance and asymmetric information. Despite of that, evidence related to control or reduce asymmetric information about the role of corporate governance mechanisms is little. Unlike the previous literature, it provides that there is comprehensive overview of the affiliation of corporate governance with asymmetric information.

Although, little evidence of link of corporate governance with asymmetric information variables are available, this study aims to identify the best combination of corporate governance committees that can reduce the level of asymmetry. No previous studies have been carried out to determine the best combination of corporate governance committees to resolve institutional problems as well as to reduce asymmetric information. Previous work was only an attempt to link corporate governance mechanisms and their impact on value or asymmetric information. This study examines four board committee's characteristics; overlapping members in Audit and HR/remuneration committee, number of overlapping members in committees, number of committees and average member in committees. This study also find out the potential impact of Board Committee's Characteristics SG&A. This research samples are taken from Pakistani's companies. In chapter two, the theoretical and conceptual foundations of corporate governance and cost behavior are discussed. Chapter three discusses the methodology. This chapter consist on research design, population, sample selection, data collection, variable definition and regression equations. Chapter four discusses the descriptive analysis, Pearson correlation, unit root test, co-integration test and multiple regression analysis, results of the effect of board committee's characteristics variables on asymmetric cost behavior. Chapter 5 concludes the thesis with a summary of the most important ideas.

2. LITERATURE REVIEWS

Corporate Governance has not agreed definitions. It has no limits for defining or reviewing (Solomon, 2007). A UK based committee on the Financial Aspects of Corporate Governance has defined corporate governance as "Corporate governance is the system by which companies are directed and controlled" (Clarke, 2007, p.2). As there

are many definitions related to corporate governance, it can be categorized according to the agency and stakeholder theory.

Denis and McConnell (2003, p.2) defined "the set of mechanisms - both institutional and market-based that induce the self-interested controllers of a company (those that make decisions regarding how the company will be operated) to make decisions that maximize the value of the company to its owners (the suppliers of capital)". This definitions support the concept of stakeholder theory. Sanda *et al.* (2005, p.1) defined corporate governance as " ways in which all parties interested in the well-being of the firm (the stakeholders) attempt to ensure that managers and other insiders take measures or adopt mechanisms that safeguard the interests of the stakeholders". From above definition, it is extracted that the corporate governance do the business in way that all stakeholders get optimum benefits from the organizations. Specific determinants of corporate governance are company size, type of industry, size of the board of directors, proportion of independent directors and committees in board and ownership structure. However, this research focuses on the characteristics on board committees and overlap members in committees.

The study discuss the studies conducted on asymmetric cost behavior. A model which help to examine that costs behave asymmetrically (Anderson *et al.*, 2003), where most of the researchers follow their model. One more study in USA, change in sales cause cost stickiness in different degrees (Subramaniam & Weidenmier, 2003). One recent study shows that SG&A costs respond symmetric behavior and COGS looks anti-sticky, by examining all listed manufacturing companies in Jordan during 2008-2012 (Abu-Serdaneh, 2014). Moreover, Banker and Byzalov (2014) found that operating costs behave sticky in 16 countries out of 20, they conclude that behavior of asymmetric cost is a global phenomenon. One more study examines cost behavior that are not consistent with previous studies. They found that total labor cost is stickiness, but not for COGS, SG&A, not even operating costs (Dalla Via & Perego, 2014). In another recent studies, the results indicate the stickiness of both SG&A and COGS but operating costs respond anti-sticky (Ibrahim, 2015). The first study, Dierynck *et al.* (2012) find that managers reaching the zero earnings benchmark, it will increase labor cost to little extent when activity increases, when activity fall, it will cause in decreasing labor costs to a larger extent. A recent study found that behavior of COGS was sticky in Pakistan. It increased by around 1% per 1% increase in sale revenue, but decreased only 0.88% per 1% decreased in sale revenue (Shafique & Ali, 2020).

Authors investigate incentives for managers to avoid losses. It will mitigates the cost skickness (Kama & Weiss, 2013). In another study, Koo *et al.* (2015), examines the association between earnings management and cost stickiness. They found that mangers minimize costs to manage earning while having declining in activities, however firms having earnings management incentives found cost stickiness. Chen *et al.* (2012) also indicate that institutional ownership, board independence and threats to takeover could alleviate the agency problem's influence on cost stickiness. Pichetkun (2012) accepts that CG would influence the cost stickiness but he did not take board characteristics in his study. A study shows that employment protection laws restrict managers' ability to minimize labor costs when demand falloffs, causing cost stickiness to increase (Banker *et al.*, 2013). Finally, a recent study shows that earnings management shows that effective CG can help mitigate cost stickiness, and that cost stickiness is mitigated by the interaction between CG and earnings management (Xue & Hong, 2016).

2.1 Hypotheses Development

2.1.1 SG&A Cost Behavior is Asymmetric

A model which help to examine that costs behave asymmetrically (Anderson *et al.*, 2003), where most of the researchers follow their model. A study in USA, change in sales cause cost stickiness in different degrees (Subramaniam & Weidenmier, 2003). Along with, a study in Japan, proved that SG&A cost behave sticky it rise by 0.59%, but fall by 0.45% in response of 01% change in sales. Furthermore, it also proved that Economic situation also affects the behavior of cost stickiness (He *et al.*, 2010). One recent study shows that SG&A costs respond symmetric behavior and COGS looks anti-sticky, by examining all listed manufacturing companies in Jordan during 2008-2012 (Abu-Serdaneh, 2014). However, in Egypt CGS behave asymmetric. Weiss (2010) also proved the same thing that CGS behave asymmetric. Moreover, Banker and Byzalov (2014) found that operating costs behave sticky in 16 countries out of 20, they conclude that behavior of asymmetric cost is a global phenomenon. One more study examines cost behavior that are not consistent with previous studies. They found that total labor cost is stickiness, but not for COGS, SG&A, not even operating costs (Dalla Via & Perego, 2014). In another recent studies, the results indicate the stickiness of both SG&A and COGS but operating costs respond anti-sticky (Ibrahim, 2015). The first study, Dierynck *et al.* (2012) find that managers reaching the zero earnings benchmark, it will increase labor cost to little extent when activity increases, when activity fall, it will cause in decreasing labor costs to a larger extent. From the above, it is extracted following hypotheses

H1: The SG&A cost behavior of Pakistan-listed firms is asymmetric.

2.1.2 Board Committee Characteristics and SG&A Cost Behavior

Pichetkun (2012) accepts that CG would influence the cost stickiness but he did not take board characteristics in his study. A study shows that employment protection laws restrict managers' ability to minimize labor costs when demand falloffs, causing cost stickiness to increase (Banker *et al.*, 2013). Finally, a recent study shows that earnings management shows that effective CG can help mitigate cost stickiness, and that cost stickiness is mitigated by the interaction between CG and earnings management (Xue & Hong, 2016). Likewise, board committees should be considered while examining the relationship between corporate governance and firm performance. Since such mechanism has potential in order to reduce certain costs that are connected with big and autonomous boards. So, in this study, it needs to be confirmed that whether establishing monitoring committees can alleviate these associated cost with boards or not. From the above, this concludes following hypotheses:

H2: Board committee characteristic has significant relationship with SG&A cost behavior.

2.1.3 Number of Committees and SG&A Cost Behavior

The number of committees on the board varies greatly from company to company, with the board of directors having one to nine committees (Klein, 1998; Reeb & Upadhyay, 2010). Ferris *et al.*, 2003 focus on the number of committees and others observe directors or the gender diversification in committee (Bilimoria & Pinderit, 1994). Faleye *et al.*, 2011 stated that the effectiveness of board monitoring increases when the majority of independent directors work on two or more monitoring committees. They also found that this increase was expensive because the director could not spend enough time giving advice. Harrison, 1987 argues that managers can elect large board members and form many board committees to legitimize their corporate governance efforts. Previous research has found evidence that board committees play an effective monitoring role (Anderson *et al.*, 2004; Beasley, 1996; Carcello & Neal, 2000; Hadani *et al.*, 2011). Likewise, board committees should be considered while examining the relationship between corporate governance and firm performance. Since such mechanism has potential in order to reduce certain costs that are connected with big and autonomous boards. So, in this study, it needs to be confirmed that whether establishing monitoring committees can alleviate these associated cost with boards or not. From the above, this concludes following hypotheses:

H3: NCB has significant relationship with SG&A Cost behavior.

2.1.4 Average Number of Members in Committee and SG&A Cost Behavior

The size of the audit committee or other monitoring committee influences the integrity of the account (Anderson *et al.*, 2004) and change will reduce the perception of risk. If the committee is smaller and has a clear mandate, they are more likely to promote the accountability of certain directors and thus reduce problems with release. However, it is expected a positive relationship between board size and company performance if the company has several committees. On average three to five members are members of each of these permanent committees. Because these committees are more effective when they have more outsiders (Klein, 1998), the presence of the committee can also affect the relationship between board independence and solid performance. On the basis of above, this study concludes following hypothesis:

H4: ANMC has significant relationship with SG&A Cost behavior.

2.1.5 Overlapped Member in Committee and SG&A Cost Behavior

A research has confirmed that overlapping member in compensation committee and audit committee play a beneficial role in that environments where managers are more likely to reach or exceed profit margins (Habib & Bhuiyan, 2018). Audit committee members having expertise in accounting and financial can play a useful role in limiting opportunistic reporting behavior (Dhaliwal *et al.*, 2010; Kent *et al.*, 2016). Therefore, the common member in both committee who also sit on the compensation committee and audit committee has been identified as beneficial for better information exchange. A study on the audit committee having financial expertise confirmed that more financial experts members in audit committee improved income quality (Krishnan & Visvanathan, 2007; Dhaliwal *et al.*, 2010), reducing the possibility of repetitive changes (Marciuikaityte & Varma, 2008; Cohen *et al.*, 2010) and increasing the likelihood of eliminating internal weaknesses on time (Goh, 2009). From the above analysis this study postulate following hypotheses:

H5: OMC has significant relationship with SG&A Cost behavior.

2.1.6 Number of Overlapped Members in Committees and SG&A Cost Behavior

Van der Zahn and Tower (2005) empirically examine the idea of Higgs (2003) that overlapping directors is sub-optimal. Using a sample of companies in Singapore, they examine directors, who overlap between audit committees, remuneration, and nominations. They found that boards with higher levels of overlap of members in committees were

less attractive for earning management. However, there are some cost related to the degree of overlap of members in board committees. As described by Laux and Laux (2009), the potential benefit of the delegating function to committees is that the use of smaller subgroups can reduce free-rider problem rather than large groups. If there is a full overlapping committee, the subgroup structure and its benefits will fall. Furthermore, high levels of overlap in committees must reduce efforts and eliminate accountability, which can affect the audit committee's oversight role. The higher level of overlap between committees is therefore not related to the higher quality of financial statements. In addition, research shows that committee structures have a reduced benefit when committees have overlap of members and its earning decreases (Laux & Laux, 2009).

H6: NOMC has significant relationship with SG&A Cost behavior.

2.1.7 Managerial Incentives and SG&A Cost Behavior

Authors investigate incentives for managers to avoid losses. It will mitigates the cost stickiness (Kama & Weiss, 2013). In another study, Koo *et al.* (2015), examines the association between earnings management and cost stickiness. They found that managers minimize costs to manage earning while having declining in activities, however firms having earnings management incentives found cost stickiness. Chen *et al.* (2012) also indicate that institutional ownership, board independence and threats to takeover could alleviate the agency problem's influence on cost stickiness. A research shows that when sales fall, managers reduce costs more aggressively because they are awarded incentives to avoid losses, avoid falling profits, and meet financial analyst sales forecasts. Adjusting resources to achieve these sales goals significantly moderate the level of cost stickiness (Banker *et al.*, 2011). In addition, in some circumstances, the asymmetric costs behavior is removed when these incentives are present (Kama & Weiss, 2013). However, we develop the following hypothesis

H7: Managerial Incentives has significant relationship with SG&A cost behavior.

This study extract the following theoretical framework from the above discussion. The figure 2.3 shows the relationship between Board committee's structures with asymmetric cost behavior.

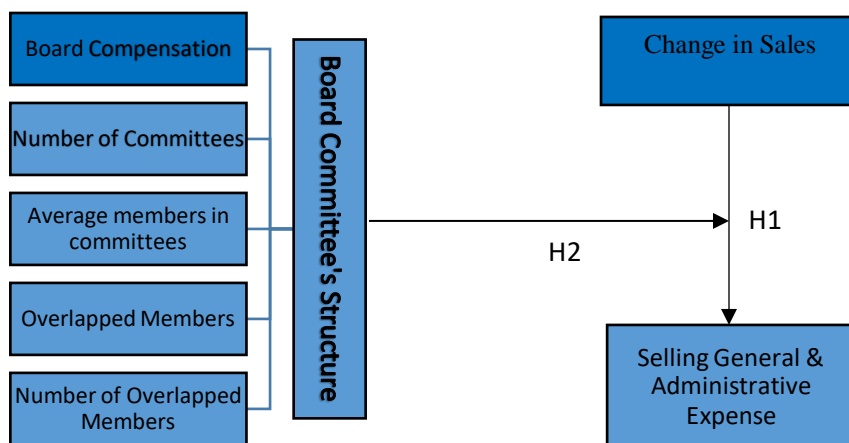


Fig. 1. Theoretical Framework

3. METHODOLOGY

The listed companies in the Pakistan Stock Exchange are taken as whole population. It is Pakistan's largest stock exchange. It has over 940 listed companies representing over 38 industries. It is the merger of three stock exchange market (Karachi Stock Exchange, Lahore Stock Exchange and Islamabad Stock Exchange). It is appropriated to create a non-probability sample to represent all industries. This studied followed a number of selection criteria, followed by previous literature. First, financial sector and services sectors are excluded due to having differ in capital structure and risk characteristics. Secondly, companies having inappropriate data and facing financial crisis are excluded (Tseng *et al.*, 2015). Thirdly, if the expenses exceed the income of the current year, such firm are also excluded and lastly, according to Cannon (2014), extreme observations, where the standardized residual value of each observation exceeds an absolute value of 3. As a result, 86 companies were taken into account as sample. It represent the 19.56% of total population. Data required in measuring the dependent variables; change in cost of goods sold, independent variables; Change in sales, overlapped members in committee, number of overlapped members, number of committees in

corporate governance and average members in committees board compensation collected from the annually audited financial reports of companies and their websites for the years 2014-2018. Financial reports are downloaded from Pakistan Stock Exchange (PSX), websites and head offices of companies.

3.1 Models

The objective of this study is to check the asymmetric COGS behavior of Pakistani firms and find out the relationship between board committee's characteristics (NCB, ANMC, OMC, NOMC and BC) and cost behavior (COGS). This study develop the following equation with including three-way interaction-term only as prescribed by Anderson *et al.* (2003) and Kam & Weiss, (2013) in their study. Furthermore, this study develop other equation with three-way interaction terms added with standalone variables as used in latest studies (Dierynck *et al.*, 2012; Ibrahim *et al.*, 2018). Anderson *et al.* (2003) suggest an innovator regression model in order to determine whether an increase in costs is dissimilar from a decrease in costs when the corresponding activity changes. This model is helpful to measure cost reactions to alteration in current sales. It will also help to differentiate the periods of rising and falling sales of a firms (Anderson *et al.*, 2003). A dummy variable (DecDummy) in this model help to nominate years of falling and rising activity. Hence, the popular studies (e.g. Kama & Weiss, 2013 and Ibrahim, 2018) follow the model of Anderson *et al.* (2003). To test for possible relationship between board characteristics and cost asymmetry, this study extends this model to include number of committees in board, average number of members in committee, overlapped member in committee (dummy variable) number of overlapped in committee, board compensation and other control variables like; economic growth and institutional ownership by taking product of each variable with DecDummyit \times Log (Δ Salesit). Consequently, three-way interactions terms are created according to relevant studies (Anderson *et al.*, 2003; Chen *et al.*, 2012; Dierynck *et al.*, 2012; Ibrahim, 2018 and Shafique & Ali, 2020).

All of the above, this study develop equation on basis of control variables and without control variables.

Model 1

$$\Delta\text{COGS}_{it} = \beta_0 + \beta_1\text{Log}(\Delta\text{Sales}_{it}) + \beta_2\text{Dec_Dummy}_{it} * \text{Log}(\Delta\text{Sales}_{it}) + \Sigma$$

Model 2: (No controls)

$$\begin{aligned}\Delta\text{COGS}_{it} = & \beta_0 + \beta_1\text{Log}(\Delta\text{Sales}_{it}) + \beta_2\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \\ & + \beta_3\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{NCB}_{it} \\ & + \beta_4\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{ANMC}_{it} \\ & + \beta_5\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{OMC}_{it} \\ & + \beta_6\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{NOMC}_{it} \\ & + \beta_7\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{BC}_{it} \\ & + \beta_8\text{NCB}_{it} + \beta_9\text{ANMC}_{it} + \beta_{10}\text{OMC}_{it} + \beta_{11}\text{NOMC}_{it} + \beta_{12}\text{BC}_{it} + \Sigma\end{aligned}$$

Model 3: (control variables)

$$\begin{aligned}\Delta\text{COGS}_{it} = & \beta_0 + \beta_1\text{Log}(\Delta\text{Sales}_{it}) + \beta_2\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \\ & + \beta_3\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{NCB}_{it} \\ & + \beta_4\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{ANMC}_{it} \\ & + \beta_5\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{OMC}_{it} \\ & + \beta_6\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{NOMC}_{it} \\ & + \beta_7\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{BC}_{it} \\ & + \beta_8\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{EG}_{it} \\ & + \beta_9\text{Dec_Dummy}_{it} \times \text{Log}(\Delta\text{Sales}_{it}) \times \text{IOS}_{it} \\ & + \beta_{10}\text{NCB}_{it} + \beta_{11}\text{ANMC}_{it} + \beta_{12}\text{OMC}_{it} + \beta_{13}\text{NOMC}_{it} + \beta_{14}\text{BC}_{it} + \beta_{15}\text{EG}_{it} \\ & + \beta_{16}\text{IOS}_{it} + \Sigma\end{aligned}$$

3.2 Control Variables

The economic growth (EG) is measured against real GDP. It is used to verify the hypothesis when demand decreases during a period of economic growth. Managers feel no hesitation to withdraw resources, because managers consider this fall as temporary. And if activity fall during the lower economic growth, than sticky cost behavior is to be higher in periods of economic growth, because managers do not withdraw allocated resources (Anderson *et al.*, 2003; Banker *et al.*, 2013; Ibrahim, 2015). Lastly, institutional ownership (IOS) is one of crucial control variable to examine the relationship between board committee's characteristics and COGS asymmetric behavior. Institutional ownership play an important role in better supervision. Agency theory and the effective supervisory hypothesis recommend that Institutional investors are more complex investors. They have more experience and power as compared to others. Therefore, they can effectively monitor behavior of management (Jensen & Meckling, 1976; Abdel-Fattah, 2008). Governance mechanisms such as IOS and board independency are effective in reducing the influence of agency problems on asymmetric behavior of COGS.

3.3 Variable and Operational Definition

Table 1. Variables and Operational Definition

Variables	Operational Definition	Measurement	Source
<u>Dependent Variables</u>			
$\Delta SG\&A_{it}$	Change of Selling & General Administration Cost	"It is calculated as the year _t SG&A divided by year _{t-1} for the company I"	From Annual Report
<u>Independent Variables</u>			
$\Delta Sales_{it}$	Change of Sales	"It is calculated as the year _t net sales divided by the net sales of year _{t-1} for the firm I"	From Annual Report
$DecDummy_{it}$	Dummy Variable	"if the current year's sales less than the previous year's net sales then take dummy variable that equal to '1' and '0' otherwise"	Created on the basis of annual report data
$DecDummy_{it} \times \log(\Delta Sales_{it})$	Interaction-Term	"A two-way interaction term resulting from the multiplication of the dummy variable by the natural logarithm of change in net sales for the year _t for firm I"	Created on the basis of annual report data
<u>Board Committee's Structure</u>			
Overlapped Members of Committees	Dummy Variable	"A dummy variable that equal to '1' if at least one member is common in the compensation committee and audit committee and '0' otherwise"	Created on the basis of annual report data
Number of Committees in Corporate Governance	Number of Committees in Board	"Number of Committees in Board"	Created on the basis of annual report data
Average number of members in committees	Average number of members in Committees	"Average number of members in Committees"	Created on the basis of annual report data
Number of overlapped members in Committees	Average number of overlapped members	Average number of overlapped members	Created on the basis of annual report data
Board Compensation	All incentive of CEO, Executive & Non-Executive Directors	"Sum of all compensation of board of directors"	From Annual Report
<u>Control Variables</u>			
Economic Growth	Real GDP	"Percentage of real gross domestic product growth in year _t , used as proxy for economic growth. Taken from World Bank website"	World Bank
Institutional Ownership	Ownership of Institutional Investor	"The number of shares owned by institutional investors is divided by the number of companies _i and shares outstanding in year _t "	From Annual Reports

4. DATA ANALYSIS AND RESULTS

Table 2 presents descriptive statistics about annual sales and SG&A for the complete five years sample. SG&A average is 1.523 million Pakistani Rupees which are lower than SG&A mean of \$145 million of the Egyptian pounds sample as reported by Ibrahim (2018) and SG&A mean of \$229.45 million of the industrial firms covering the twenty years from 1979 to 1998 stated by Anderson *et al.* (2003) by considering the exchange rates. However, the average value of SG&A costs as proportion of sales value is 14.11% (standard deviation = 49.30%), which is more than the mean value of 11% reported by Ibrahim (2018) but less than the mean value of 26.41% reported by the Anderson *et al.* (2003).

The average net sales is 20 million in Pakistani Rupees along with a standard deviation of 33 million of this study sample. A study in USA, reported by Chen *et al.* (2012) that the average net sales of \$5,383 million of study sample is greater than this study sample and also less than the average net sales of \$1,277, \$1,153, \$1,294 and 2,416 million of samples tested by Anderson *et al.* (2003), Calleja *et al.* (2006), Subramaniam & Weidenmier (2003) and Ibrahim (2018) respectively. The mode of NCB is 2. It means that majority of the firms have two major board committees (Remuneration and Audit) as reported by Madhani (2015). ANMC mode is 3. It represents that size of the committees is three which is supporting the finding of Upadhyay *et al.* (2013). There are 3 to 7 members in committees in firms listed in Pakistan Stock Exchange. About 91% of the observation from sample is consisted on overlapping membership in audit and remuneration committee. It means that at least one member in audit committee is also present in remuneration committee. Whereas, there are average 2 overlapped member in both committees (audit and remuneration). Maximum overlapped members in committees is 5. The average value of Economic Growth is 5.12%, it indicates that the average economic growth remains 5.12% from 2014 to 2018. Lastly, institutional ownership has 6.44% average value, which indicates that on average 6.44% of the properties of the sample companies are owned by institutional investors.

Table 2. Descriptive Statistics

Construct	Variables	Mean	Mode	Maximum	Minimum	Std. Dev.
Asymmetric Cost Behavior	SG&A	1,523,373		27,278,105	1,367	2,915,711
	SG&A%	14.11		785	1.08	49.30
	Sales	20,800,765		233,607,420	599	33,050,880
Board Committee's Characteristics	NCB		2	6	1	
	ANMC		3	7	3	
	OMC		1			
	NOMC		2	5	0	
Board Compensation	BC	385,589.2		5,883,220	0	716,107.8
Control Variables	EG	5.213		5.701	4.675	0.476
	IOS	6.438		618.834	0.137	42.178

$\Delta SG\&A_{it}$ =Change in Selling & General Administrative Expense, NCD=Number of Committees in Board, ANMC=Average Number of Members in Committee, OMC=Overlapped Members in Committee, NOMC=Number of Overlapped Members in Committee, BC=Board Compensation, EG=Economic Growth, IOS=Institutional Ownership.

Table 3 provides the Pearson correlation between independent variables. Sales has insignificant relationship with all board committee's variables and control variable. However, the results reflect positive correlations between board committee's variables. NCB has positive associations with ANMC (0.249***), OMC (0.129***), NOMC (0.139***), BC (0.339***), significantly and no relationship found with EG. But, NCB has negative insignificant relationship with IOS (-0.013). ANMC has positive correlation with OMC (0.111**), NOMC (0.452***), and BC (0.174***), significantly and no relationship found with EG. But, It has negative insignificant relationship with IOS (-0.049). OMC has positive and significant relations with NOMC (0.517***), and BC (0.112**) and no relationship found with EG. But, OMC has negative insignificant relationship with IOS (-0.01). NOMC has an insignificant positive relation with BC (0.068**) and insignificant relationship found with EG (0.677) and it has negative insignificant relationship with IOS (-0.065). BC has insignificant negative relationship with EG and IOS. Moreover, EG has no relationship with IOS. These results reflect that the increase in number of committees in board and committee size are related to an increase in chances of overlapped members in committee. Further, more the number of board committees in corporate board and committee size are resulted to more board compensation.

Table 3 shows the value of Pearson correlation between the independent variables and the dependent variable. SG&A has negative relationship with Sales, NCB, OMC, NOMC, BC and IOS except ANMC, but relationship remain insignificant. These variables have high values, represent the lower the quality of the board committee. Consequently, the costs show more asymmetric behavior. This correlation indicates, there is inverse relationship between quality of the committee and asymmetric costs. It means that stronger the board committees, lower the asymmetric cost behavior and lower the quality of board committees, the higher the degree of asymmetric behavior.

Table 3. Correlation

Variables	$\Delta SG\&A_{it}$	$\Delta Sales_{it}$	NCB	ANMC	OMC	NOMC	BC	SD	EG	IOS
$\Delta SG\&A_{it}$	1.000									

$\Delta Sales_{it}$	-0.026	1.000								
	0.588	---								
NCB	-0.025	-0.015	1.000							
	0.606	0.756	---							
ANMC	0.039	-0.030	0.249	1.000						
	0.424	0.529	0.000	---						
OMC	-0.002	0.013	0.129	0.111	1.000					
	0.960	0.788	0.007	0.020	---					
NOMC	-0.024	0.014	0.139	0.452	0.517	1.000				
	0.615	0.775	0.000	0.000	0.000	---				
BC	-0.016	-0.026	0.339	0.174	0.112	0.068	1.000			
	0.742	0.597	0.000	0.000	0.020	0.159	---			
SD	0.129	0.039	0.026	0.118	0.042	-0.001	0.091	1.000		
	0.000	0.425	0.591	0.010	0.390	0.979	0.059	---		
EG	-0.158	0.074	0.000	0.000	0.000	0.677	-0.627	0.632	1.000	
	0.799	0.154	0.000	0.000	0.000	0.209	0.257	0.253	---	
IOS	-0.015	0.011	-0.029	-0.049	-0.001	-0.065	-0.021	0.033	0.000	1.000
	0.762	0.814	0.537	0.300	0.983	0.181	0.657	0.496	0.000	---

$\Delta SG\&A_{it}$ =Change in Selling & General Administrative Expense, NCB=Number of Committees in Board, ANMC=Average Number of Members in Committee, OMC=Overlapped Members in Committee, NOMC=Number of Overlapped Members in Committee, BC=Board Compensation, EG=Economic Growth, IOS=Institutional Ownership.

Therefore, in order to know that there is no collinearity among the independent variables, variance inflation factor (VIF) of each independent variable is calculated. VIF values should not be greater than 10. After that, estimating the relationship between the independent variable and the dependent variable may be correct. Certain assumptions must be accepted to draw conclusions based on regression analysis. These assumptions should be checked before running the regression model. It is assumed that the independence of all dependent variable values is taken over by separate business entities (Berry, 1993).

Table 4: Tests of Normality

Construct	Variables	Skewness	Kurtosis	Jarque Bera	Prob Value
Board Committee's Characteristics	$\Delta SG\&A_{it}$	-0.16	3.29	3.39	0.18
	$\Delta Sales_{it}$	4.93	99.90	169989.5	0.00
	NCB	1.43	8.47	683.92	0.00
	ANMC	1.25	3.82	124.52	0.00
	OMC	-2.95	9.72	1432.70	0.00
	NOMC	0.26	1.97	23.90	0.00
Board Compensation	BC	-1.76	11.25	1439.73	0.00
Control Variables	EG	-0.30	1.25	61.73	0.00
	IOS	0.93	6.23	248.08	0.00

$\Delta SG\&A_{it}$ =Change in Selling & General Administrative Expense, NCB=Number of Committees in Board, ANMC=Average Number of Members in Committee, OMC=Overlapped Members in Committee, NOMC=Number of Overlapped Members in Committee, BC=Board Compensation, EG=Economic Growth, IOS=Institutional Ownership.

Table 4 shows the results of normality test. To check the normality of data that if the probability value of Jarqua-Bera test is less than 0.05 then accepts data is not following normal distribution. Table 4 shows that, probability value of Jarqua- Bera test rejects that data is following normally distribution. Kurtosis and skewness values also reject the null hypothesis (H_0). Kurtosis values are greater than 3.00 and skewness value is also not coming in the range -0.8 to 0.8 (Jondeau & Rockinger, 2003). Non normal distribution of data can be transformed into normal distribution after taking log. It means, the presence of extreme or outliers values has been removed. Deletion of such extreme value may results in inefficient or misleading conclusions (Cook & Weisberg, 1982). Furthermore, the normal residual probability graph confirms that there is no serious violation of the normal assumptions.

Correlation among the independent variables is a big problem. It can be checked through seeing the correlation matrix among independent variables. So, values remained between -0.0294 to 0.447. Tabachnick and Fidell (1996) explained that the bivariate correlation between the independent variables of 0.90 or more, indicates multicollinearity. In addition, multicollinearity through Variance Inflation Factor can also be examined. Variance Inflation Factor (VIF) technique is used to see the multicollinearity among independent variables. VIF values ranged from 1.01 to 1.77. It means that there no multicollinearity among independent variables because these values are less than threshold value 9.00 in all cases. Furthermore, it also indicate that none of the independent variables can be explained by other independent variables. As noted by Myer (1990), values less than 10 do not pose a risk of multicollinearity. The white hetroscedasticity test (non-cross products) was used. The LM statistic (Breusch-Pagan / Cook-Weisberg test for heteroscedasticity) remained below than its critical value in almost all cases. It indicates that the deviation of independent variable at each level is homogeneous. Accordingly, there is no evidence of heteroscedasticity. In this way, we can rely on the regression results and do not need to find the generalized/ weighted least squares for further analysis.

4.1 Unit Root Test

The purpose of unit root test is to determine whether the entire variable having stationary value or non-stationary values. Stationary data means that average, variance and covariance or autocorrelation remain same all the time. To check the data is stationary or non-stationary, first we saw the intercept and trends of values. Figures depicts that there is existence of intercept but not showing any trends. Now unit root test is applying on all dependent and independent variables at individual intercept. The Table 5 shows that (panel unit root test) only four variables SG&A are stationary at level. While, Independent variables (NCB, ANMC, OMC, NOMC and BC) and control variables (EG and IOS) are stationary at 1st difference.

4.2 Co-integration Test

The purpose of co-integration test is to check that all variables are in same order or not and having long run association. Before running the panel co-integration it should be assured that variables are non-stationary at level and become stationary at 1st difference. The Table 5 shows that same conditions.

Table 5. Unit Root Test

Variables	Levin, Lin & Chu t^*		ADF - Fisher Chi-square		PP - Fisher Chi-square		Unit at
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.	
$\Delta SG\&A_{it}$	-11.36	0.00	331.24	0.00	336.20	0.00	Level
$\Delta Sales_{it}$	-32.59	0.00	634.87	0.00	631.71	0.03	1 st Difference
NCB	-3.67	0.00	3.94	0.14	5.53	0.06	1 st Difference
ANMC	-17.3	0.00	69.87	0.00	84.32	0.00	1 st Difference
OMC	-1.77	0.00	3.44	0.75	4.94	0.00	1 st Difference
NOMC	-14.65	0.00	66.62	0.00	82.45	0.00	1 st Difference
BC	-38.81	0.00	452.34	0.00	473.84	0.00	1 st Difference
EG	-1.99	0.02	91.27	1.00	91.27	1.00	1st Difference
IOS	-8.09	0.00	77.66	0.00	77.07	0.00	1 st Difference

Co-integration test states that the H_0 of no co-integration is rejected. Because t-statistics -15.05 at significance level 0.00 is given by Kao Residual Co-integration Test. Hence, it is concluded that all variables have long run association with each other and co-integrated in same order. The Table 6 shows the estimated values of necessary statistics of the model. Huasman test rejects the H_0 . It means panel data fixed effects model is appropriated because the guideline for Huasman test is that, if statistical value of test is significant (p-value>0.05) then H_0 is rejected and H_1 is accepted. The intercept term β^0 is negative and significant in this model. The coefficient β^0 represent the fixed

cost which does not change with change of activity within certain limit. Here β^0 is -0.045 at significant level 0.01. Most of the cases, it has no economic meaning. It has only mechanical interpretation. It represents the average effect of all those variables which are not included in this model. Remaining coefficients are considered as partial slope coefficient. These partial slope coefficients represent the variation in dependent variables because of one percent change in explanatory variables while other variables hold constant. Here β^0 shows the fixed cost. If production is zero than cost will be -0.045 rupees. So, it has no sense. Thus the coefficient β_1 0.20 is attached with $Sales_{it}$ means that if Sales is increased by one rupee, other variable held constant, and the $SG\&A_{it}$ increase by Rs. 0.20. The relationship is being positive. The slope coefficient β_2 0.97 attached to $DeDummy_{it} \times \log(\Delta Sales_{it})$ remains positive and remains significant in this model, which supports cost anti-stickiness. The combined value of β_1 and β_2 (0.20+0.97) is 1.17 which shows that $SG\&A_{it}$ decrease by about rupees 1.17 for a One rupees decrease in sales. It means that $SG\&A$ is showed decline more than revenue fall than rise when sales revenues rise by an equivalent amount. The possible reason is that, managers becomes more pessimistic when they realize that sales is about to fall, resulting to anti-stickiness behavior (Banker *et al.*, 2013, 2014). The coefficient β_1 and β_2 are significant at 0.01. To conclude, the finding shows that cost behave asymmetrically. Furthermore, that F-Statistics = 31.63 (0.00) and $R^2 = 0.16$ shows that model is statistically significant and explain 16% variations.

Table 6. Panel Least Square of Model Asymmetric $SG\&A$ Behavior

Variable	Coefficient	t-Statistic	Prob.	$\Delta SG\&A_{it}$
β^0 : C	-0.045	-3.09	0.00	
β_1 : $Sales_{it}$	0.203	2.64	0.00	
β_2 : $DeDummy_{it} \times \log(\Delta Sales_{it})$	0.969	5.46	0.01	
R-squared				0.16
F (2,342)				31.63
Prob(F-statistic)				0.00
Hausman Test (chi-sq. statistics)				10.38
Prob (Hausman Test)				0.00

$\Delta SG\&A_{it}$ =Change in Change of Selling & General Administration Cost, $DeDummy_{it} \times \log(\Delta Sales_{it})$ =Interaction Term

The Table 7 shows the estimated values of necessary statistics of the model. Huasman test accept the H^0 . It means panel data random effects model is appropriated because the guideline for Huasman test is that, if statistical value of test is insignificant (p-value>0.05) then H^0 is accepted and H^1 is rejected. The intercept term β^0 is negative in column (01), column (02), column (03) and column (04) and significant in this model. The coefficient β^0 (-0.20**, -0.02**, -0.39*** and -0.51***) represent the fixed cost which does not change with change of activity within certain limit. Most of the cases, it has no economic meaning. It has only mechanical interpretation. It represents the average effect of all those variables which are not included in this model. Remaining coefficients are considered as partial slope coefficient. These partial slope coefficients represent the variation in dependent variables because of one percent change in explanatory variables while other variables hold constant.

Table 7 exhibits that value of coefficient (β_1) is positive and it is significant at the level of 0.1 level ($\beta_1 = 0.10$, t-statistic = 1.87) in column (1). Likewise, the value of coefficient (β_2) is also positive and it is significant at the level of 0.1 ($\beta_2 = 4.04$, t-statistic = 9.04). As, the value of coefficient (β_1) is positive and it is significant at level of 0.1 and the value of coefficient (β_2) is also positive and it is significant at the level of 0.1 too. It shows anti-sticky cost behavior. It means that $SG\&A$ were showed decline more than revenue fall than rise when sales revenues rise by an equivalent amount. The possible reason is that, managers becomes more pessimistic when they realize that sales is about to fall, resulting to anti-stickiness behavior (Banker *et al.*, 2013, 2014). Moreover, after adding standalones but before control variables the cost also show anti-sticky behavior because column (03) shows that β_1 and β_2 remains positive and statistically significant at 0.05 and 0.01 respectively. However, after adding control variables with no standalone and standalone, β_1 turns to insignificant. The results are supporting the empirical hypothesis of asymmetric cost behavior in all columns of Table 7. The results of the four columns are mixed with the empirical hypothesis of cost asymmetric behavior. So this study approves that $SG\&A$ behave asymmetrically before control variables as in the case with the application of the basic model (see Table 6).

Many committees show lesser cost stickiness. More committees in board will show higher standard of corporate governance. But, here number of committees in board show insignificant relationship with $SG\&A$ cost behavior before

control variable. Whereas β_3 in Column (2), Column (3) and Column (4) of Tables 4.6 ($\beta_2 = 2.03 (2.16); 2.40 (2.22); 3.80 (3.29)$) shows positive and statistically significant relationship with SG&A cost behavior after adding standalone variables. These committees are designed to protect the interests of shareholders and supervise the board of directors which may conflict in interest between the committees. Additionally, managers becomes more pessimistic when they realize that sales is about to fall, resulting to anti-stickiness behavior (Banker *et al.*, 2013, 2014). Moreover, our results shows that strong CG reduces the cost stickiness (Chen *et al.*, 2012). Furthermore, when activity changes, then board committees may report to managers to adjust resources in any way regardless its effects on cost behavior.

For ANMC, the results indicate that the value of coefficients (β_4) are negative and it is significant at level of 0.1. Four columns of Table 7 shows prescribed values β_4 ($\beta_4 = -3.72 (-3.45); -3.96 (-3.75); -5.23 (-3.78); -5.53 (-4.04)$) either with standalone and control variables or without these. This result confirms that ANMC could affect asymmetric cost behavior. This study has observations that ANMC has experience less cost stickiness. This result is not consistent with the argument built in this study. End result also proves the argument of Chen *et al.* (2012) that larger members in board committees can effectively improve quality of governance. Additionally, Argument of Jensen (1993) is also established that huge boards face more trouble because they are not able to coordinate between their boards members effectively and Goodstein *et al.* (1994) proved that the bigger the board member lesser their participation in strategic decisions of the company. The probable justification, which emphasis that small boards effectively observe decision of adjustment of resources, because they face minimum disputes and with high level of agreement with board members other than large boards.

For the OMC, the results direct that the value of coefficients (β_5) are negative and it is significant at the level of 0.01 as shown in the four cases of Table 7 ($\beta_5 = -3.39 (-15.96); -4.07 (-14.35); -5.86 (-18.67); -5.48 (-16.81)$). This result shows that cost stickiness behavior is greater when at least, one member is present in audit as well as remuneration committee. Audit committee members can critically evaluate accounting discretion and they can used improved information from a common member sitting in a compensation committee to monitor the management decision. Previous studies have proved that enforcement compensation structures can lead to higher returns (Bartov & Mohanram, 2004; Cheng & Warfield, 2005) or to reduction in income (Baker *et al.*, 2003; McNally *et al.*, 2008). Overlapped members can expect a potential increase in revenue or a decrease in revenue over the financial year based on knowledge of the opportunistic behavior of compensation in revenue management. For example, if an audit committee member knows that stock options will be available during this fiscal year and will likely be available in a future year, they may want to avoid management accounting judgments that carry current year's earnings into future earnings. Such attentiveness over transferred compensation information can cause it to challenge management accounting decisions, use of estimates, changes in accounting policies, and decisions to write derivative assets and other profit management mechanisms.

When an audit committee member is also a member of the compensation committee, that member can use knowledge of management-driven incentives to outline the opportunistic accounting decisions made by the management (Laux & Laux, 2009). Therefore, overlapping members of the Audit Committee with members of the Compensation Committee can help to reduce asymmetric information between the audit committee and management. Consequently, it will be resulting in better financial reporting due to increased oversight by the audit committee. NOMC show greater cost stickiness. But, here number of overlapped members in audit and remuneration committee show insignificant relationship with cost asymmetric behavior whether, with control variables or without. Whereas Column (3) of Tables 4.6 shows negative and statistically significant relationship with cost asymmetric behavior after adding standalone variables. But it turns to insignificant relationship with cost behavior after adding control variables. The possible reason is that, there are costs associated with overlapping levels. The potential benefit of making committees is to reduce problems and delegating roles to large groups is proved to create problems (Laux & Laux, 2009). If there is complete overlap of members in different committees then the committee's structure and its role break down. In addition, research shows that the committees' on-board structure has the advantage of being reduced if there is too much overlap (Laux & Laux, 2009). Consequently, the purposes of overlapped members in committees is not attained. Its benefit decreases after a certain point. More overlapping between the audit and remuneration committee have a detrimental effect. Means, costs of the overlap increase by its benefits (Chandar *et al.*, 2012).

For the BC, the results indicate that the coefficients ($\beta_7 = 0.24; (2.94)$) are positively and statistically significant at the 0.01 level in column 01 of Table 7. This result means that cost stickiness is lower in boards with a high board compensation, which supports the study assumptions. But, after adding control variables BC turns to insignificant relationship with SG&A cost behavior. Sometimes, managers cuts the resources in order to achieve earning targets when sales fall. They do so to get incentives. Therefore, incentives influence the manager's deliberated decisions. Ultimately, it effects on asymmetric cost behavior. The results shows that manager's deliberated decisions effect in

creating an asymmetry of the firm's cost structure. Preliminary studies proved that how management decisions help to increase firm value and lead to cost stickiness (Anderson *et al.*, 2003; Balakrishnan *et al.*, 2004; Balakrishnan & Gruca, 2008 and Banker *et al.*, 2011). Chen *et al.* (2012) suggest that agency-driven incentives introduce greater cost stickiness.

There is a negative and statistically significant correlation shown by the coefficient of economic of growth at 0.05 and 0.01 respectively before and after standalone variables $\{\beta_8 = -0.46 (-2.17); -9.19 (-3.20)\}$, which infers that there is greater cost stickiness, all through, there is high economic growth periods. Managers are optimistic during the economic growth period because they believe that reduction in sales is momentary, therefore managers are hesitant to retire slack resources even after the reduction of sale, which shows increase in cost stickiness (Anderson *et al.*, 2003; Ibrahim, 2015). On the other hand, this argument is incompatible with the regression result and the result inferred by the Anderson *et al.* (2003), Banker *et al.* (2013), and Ibrahim (2015) proposed the negative relation significantly and Dierynck *et al.* (2012) proposed an insignificant relation.

Finally, a negative and statistically significant correlation is displayed by coefficient of institutional ownership at 0.05 and 0.01 respectively $\{\beta_9 = -0.02 (-2.33); -0.53 (-2.07)\}$, which shows that there is greater SG&A cost stickiness if there is higher institutional ownership, and this also prove the study prospect. It also correlate with the monitoring hypotheses and agency theory which explains that institutional investors are well experienced in analytical skills, grasp more experience and control than others. It also facilitate these investor to observe and influence the decision making of managers (Jensen & Meckling, 1976; Abdel-Fattah, 2008). Chen *et al.* (2012) found reliable results that also confirmed that effective governance mechanism can be used as the tool of institutional ownership that can be used to alleviate the control of agency problems on stickiness of SG&A costs. Overall, SG&A insists to behave anti-sticky. Additionally, ANMC and OMC found that they maximize cost stickiness behavior either before or after adding the standalone and control variables. Whereas, BC and NCB found to decrease cost stickiness. Further, economic growth, and institutional ownership have been shown to increase cost stickiness.

Table 7. Panel Least Square of Model CG & Asymmetric SG&A Behavior

Variable Statistics	No Standalone		Standalone	
	Before Controls 01	After Controls 02	Before Controls 03	After Controls 04
β^0 : Intercept	-0.20** (-2.27)	-0.02** (-2.33)	-0.39*** (-5.04)	-0.51*** (-2.65)
β^1 : Sales _{it}	0.10* (1.87)	0.06 (1.14)	0.10** (2.10)	0.07 (1.40)
β^2 : DeDummy _{it} ×Log(Δ Sales _{it})	4.04*** (9.04)	12.74*** (6.58)	6.70*** (10.17)	14.16*** (6.22)
Three-Way Interaction Terms (Variables×DeDummy _{it} ×Log(Δ Sales _{it}))				
β^3 : NCB×DeDummy _{it} ×Log(Δ Sales _{it})	1.09 (1.20)	2.03** (2.16)	2.40** (2.22)	3.80*** (3.29)
β^4 : ANMC×DeDummy _{it} ×Log(Δ Sales _{it})	-3.72*** (-3.45)	-3.96*** (-3.75)	-5.23*** (-3.78)	-5.53*** (-4.04)
β^5 : OMC×DeDummy _{it} ×Log(Δ Sales _{it})	-4.39*** (-15.96)	-4.07*** (-14.43)	-5.86*** (-18.67)	-5.48*** (-16.81)
β^6 : NOMC×DeDummy _{it} ×Log(Δ Sales _{it})	0.58 (1.16)	0.37 (0.75)	1.11* (1.84)	0.81 (1.33)
β^7 : BC×DeDummy _{it} ×Log(Δ Sales _{it})	0.24*** (2.94)	0.05 (0.54)	0.17** (1.97)	-0.07 (-0.57)
β^8 : EG×DeDummy _{it} ×Log(Δ Sales _{it})		-0.46** (-2.17)		-9.19*** (-3.20)
β^9 : IOS×DeDummy _{it} ×Log(Δ Sales _{it})		-0.02** (-2.33)		-0.53** (-2.07)
Standalone Variables (Variables without Interaction)				
β^{10} : NCB			-0.17 (-1.58)	-0.23** (-2.19)
β^{11} : ANMC			0.27** (1.99)	0.28** (2.11)
β^{12} : OMC			0.31*** (8.86)	0.29*** (8.25)

$\beta 13$: NOMC			-0.07 (-1.17)	-0.06 (-1.00)
$\beta 14$: BC			0.004 (0.40)	0.02 (1.49)
$\beta 15$: EG				0.12 (0.43)
$\beta 16$: IOS				0.01 (0.34)
Wald Chi2 (16)	464.66 (0.00)	501.02 (0.00)	650.64 (0.00)	685.19 (0.00)
R-Square	0.59	0.61	0.65	0.66
Hausman Test (chi-sq. statistics)	986.23 (0.23)			

5. CONCLUSIONS

This study confirmed that $SG\&A_{it}$ behave anti-sticky. Sales is increased by one rupee, the $SG\&A_{it}$ increase by Rs. 0.20 and $SG\&A_{it}$ decreases by about rupees 1.17 for a one rupees decrease in sales. This result confirmed the Hypothesis 2. It shows that $SG\&A$ behave asymmetrically. $SG\&A$ insists on being anti-sticky in this study. Additionally, ANMC and OMC found to increase costs stickiness. $SG\&A$ behavior remain stickiness either before or after introducing the independent and control variables. Whereas, BC found to behave cost anti-stickiness. Further, EG and IOS are found helpful to increase cost stickiness. This study also contribute in existing literature by examining whether costs in the Pakistani business environment are shown asymmetrical behavior. In addition, research was conducted to investigate sticky behavior at multiple levels. First, it examines whether the cost-effectiveness behavior is dependent on changes in the sales of the most actively traded Pakistani's companies listed in 2014 to 2018. The results show that all investigated costs ($SG\&A$) behave asymmetric. It means that they increase/decrease more than they decrease/increase when the demand changes by an appropriate amount.

This study expands the literature on costs by endowing fresh empirical evidence from emerging markets and examining the impact of Board Committees Characteristic. In addition, Average numbers of members in committees have been found to influence managers' decisions and therefore cost behavior change. Like, OMC has also helpful in reducing the cost stickiness behavior. The results showed that smaller panels decrease cost stickiness. However Board Compensation increases cost stickiness. Moreover, Economic growth and institutional ownership, as a control variable, was found to increase the $SG\&A$ stickiness. Second, this study examines and compares the asymmetric behavior of cost before and after implementation of control variables. The reason for this comparison is to show that how board committee's characteristics (e.g. NCB, ANMC, OMC, NOMC and BC) effect on cost behavior while in economic growth and institutional ownership. The analysis results show that the $SG\&A$ behave stickiness after control variables. The assumption that corporate governance mechanisms are effective. It can influence managers' decisions as well as cost behavior. The general assumption is that lack of costs is the dominant cost behavior in developing and developed countries, and that central government can influence managers' decisions to adjust resources when activities are changed. The results of the study have several implications. This research is useful for researchers as well as for practitioners in Pakistan. Firstly, this study examine the sticky behavior of Pakistani firms. It will also contribute in literature for researchers of developing economies like Pakistan. Apart from that, this research is one of those studies that combine the perspective of management and financial accounting. It encourage researchers to apply this multidisciplinary approach in exploring numerous exploration topics. Secondly, it is more useful when practitioner is to take consideration of fixed costs where he estimates the change in volume of variable cost corresponding to activity changes. It also help to avoid underestimating or overestimating the responsiveness of costs to rises or declines in production. It can help Security Exchange Commission of Pakistan as well as production management to make accurate decisions based on accurate cost analysis.

One of the most important implications is that auditors can carefully evaluate various cost estimation. Cost and management accounting practices like standard costing, cost planning, Activity Based Cost (ABC), Cost-Volume-Profit (CVP) and budgeting can easily handle by auditor. It is important because slope of cost is not always constant in traditional cost model. CG regulators need to contemplate on how thoughtful management interventions can lead to asymmetric behavior in costs and how CG can mitigate such interventions. You should consider smaller committee size, only one overlap members and institutional ownership as variables that can reduce under-costs. For investors and analysts, they need to consider asymmetric cost behavior when making sales forecasts.

One limitation is that this study has small sample as compared to related studies. Additionally, only five board committees' characteristics were examined in this study, although several other characteristics still need to be investigated. Furthermore, this study examines the possible effect of board committee's characteristics with SG&A. Although there are fixed costs include in variable cost, need to be examined carefully. The main limitation of this study is that when the results may be due to other circumstances other than the CG application, the comparative method is used to study the impact of CG on cost behavior. Moreover, CG variables were not examined in this study except board committee's characteristics. However, during the investigation, we did not find any data on the level of regulatory compliance in Pakistani's emerging markets. Future research may consider the deployment of inherent cost rather than variable cost. CG is predictable to impact the cost behavior of Pakistani companies. In addition, it is valuable to find out the effects of cost reduction behavior. Either sticky behavior affect the corporate value of listed companies in Pakistan or not. Furthermore, in the field of cost accounting, studying the cost implications of standard costing tools can add value to current research. The association among cost behavior and other CG contrivances, like the features of the audit committee, the types of auditors, and various variable ownership structures can be examined. There is a need for more research to examine the association among management perks and disproportionate cost behavior. In addition, potential authors should exercise caution to prevent prices or sales data or both from being tampered with, which may lead to misleading results when determining price stability. You need to look into these issues and check actual cost and sales data before tampering. Finally, future research might suggest a solution in which we find most of the previous research to either suggest asymmetric cost behavior or the relationship between this behavior and other accounting problems.

Future studies can ultimately examine the association amongst asymmetric cost behavior and other CG mechanisms and board committee's structures. There is a need to examine the association amongst CEO compensation and asymmetric cost behavior. In addition overlapped members in committees holding position of chairman in one of the committees can also identify. Finally, future research might suggest a solution in which we find most of the previous research to either suggest asymmetric cost behavior or the relationship concerning this behavior and other accounting problems.

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