

## Asymmetric Cost Behavior: Exploring Ethical Issues Facing Management

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### Abstract

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Asymmetric cost behavior or cost stickiness is a relatively new phenomenon in accounting. Cost accounting initially assumed that traditional cost behaviors follow a symmetrical pattern, whereas sales and costs rise and fall equivalently with each other. Extending the research of Anderson, Banker and Janakiraman (2003) which introduced a theory that contradicted the normal symmetrical cost behavior by suggesting that internal factors, such as management decisions impact spending resulting in asymmetric cost behavior or cost stickiness. The objective of this paper is to explore whether asymmetric cost behavior or cost stickiness impacts corporate earnings of enterprises and if so, does this inadvertently create ethical issues for decision-making by management, as they may benefit in compensation from these decisions. By examining the link between Sales General and Administrative expenses (SG&A) and earnings, this paper shows how asymmetrical behavior influences management decision making cost. The conclusions, recommendations and implications reached in this study are generalizable and appropriate for use in developing best practices.

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**Keywords:** Asymmetrical cost behavior, Stickiness, Managerial decision makings and ethical considerations

### Introduction

As noted in Wiess (2010) asymmetric cost behavior occurs if costs increase more when activity rises than decrease when activity falls by an equivalent amount. As generally referenced in accounting literature there are three types of costs that are considered in decision making. Fixed costs remain constant over a specific period of time within a relevant range. Additionally, fixed costs are not proportional to activity whereas variable costs vary and are intended to be proportional to activity. Mixed costs are a combination of both fixed and variable. The traditional cost behavior model assumes 'variable costs change proportionally and symmetrically with changes in activity' Alavinasab, Mehrabanpour, and Ahmadi (2017).

Selling, general, and administrative costs or 'SG&A' are comprised of all three types of expenses, fixed, variable, and mixed. SG&A expenses are reportable on the income statement and are incurred as part of the general operations of a firm. Since they incur after a product has sold, they cannot be assigned to the cost of goods sold or 'COGS'. Selling expenses are related to direct and indirect expenses for products after they have sold, for example, shipping costs, advertisement, etc. General and administrative are usually more fixed than selling expenses and incurred due to the daily operations of the firm. Examples of general and administrative expenses are rent, mortgage, and administrative payroll to name a few. Sugiri, Febrianto, and Kresnawati (2017) argued that SG&A expenses have been known to have more sticky cost attributes than other expenses. Which is why we will focus on SG&A for the purpose of this paper.

### Analysis

The research provided by Anderson et al. (2003) analyzed SG&A costs of 7,629 firms in the United States over a 20-year period, using data in the Comp Stat database. According to the results of the study SG&A costs made up 26.4% of sales revenues for the sample size studied. Their studies showed that for the pool of companies sampled between the years 1979 to 1998 'SG&A costs increased .55% per 1% increase in revenue but fell only .35% per 1% decrease in revenue' Anderson et al. (2003). They used an empirical model that related changes of SG&A costs concurrently with net sales revenue.

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There are many external and internal factors that could impact cost stickiness. Economic, environmental, management behavior and political factors to name a few. The theory presented by Anderson et al. (2003) focused specifically on the existence of cost stickiness and using their sample to determine the influence by management's behavior. There was consideration for costs that move in-line with sales however the theory's main point is cost stickiness exists and management can and will actively make decisions to reallocate resources to reduce costs in the event sales are decreased.

The conclusion of the study Anderson et al. (2003) evidenced that cost stickiness behavior was present in the sample of companies related to their SG&A costs and did 'recognize the role of managers'. The evidence also suggested asymmetric cost behavior was a result of management decisions 'who weigh the economic consequences of their actions.' The study also introduced an entirely new way to examine cost behavior and the potential risks for managers, financial analysts, and auditors. Managers who can identify sticky costs are able to help reduce their risks and allocate resources appropriately. Managers could attempt to reduce risk by identifying committed resources that vary with sales or volumes and reallocating these. For example, using temporary employees or outsourcing functions that fluctuate with sales.

In 2007 (revised in 2009) Anderson and Lanen (2007) provided their own empirical test results refuting the claims of Anderson et al. (2003). Anderson and Lanen (2007) concluded that there was evidence of SG&A costs in a larger sample of 27 years however results were not sufficient evidence to support Anderson et al. (2003) and the Anderson et al. (2003) theory could not be proven as there were not meaningful tests to support the results around 'mechanistic cost behavior and managerial discretion' Anderson and Lanen (2007). In 2014, Banker and Byzalov (2014) published evidence to refute Anderson and Lanen (2007), providing additional support towards Anderson et al. (2003). Effectively, Banker and Byzalov (2014) debunked Anderson and Lanen (2007) prognosis citing 'econometric errors' and provided support that Anderson and Lanen (2007) findings actually yielded additional support to the hypothesis of Anderson et al. (2003).

A study performed by He, Teruya, and Shimizu in Japan (2010) only reinforced the validation of the study by Anderson et al. (2003). The study's objective was to determine if Japanese firms had similar 'sticky cost behavior to their U.S. counterparts' and if so, what were the factors that impact cost stickiness and did managers change their behavior related to sticky costs after the Japanese stock market collapse in 1990. This study was thought to be 'an extension' of Anderson et al. (2003). Both tests sought evidence for sticky cost behavior and management's role in that behavior. The authors of the Japanese study inferred this was a more comparable study than other theories, as Japan had the second largest economy to the United States.

The data set was representative of Japanese firms of different industries between 1975 and 2000 He et al. (2010). The study found that the 'SG&A costs increased on average 0.59% per 1% increase in sales but fell only 0.45% per 1% decrease in sales.' Additionally, and interestingly enough, they found that SG&A expenses are stickier when an increase of future revenue prediction is made by managers and that managers deliberately reassign 'resources in response to changes in sales volumes.' Researchers in this study He et al. (2010) also identified sticky costs being much less sticky after the 1990 economic bubble burst which evidenced managers changed their cost behaviors after this period.

Another study in support of Anderson et al. (2003) findings was performed in the country of Jordan. Magheed (2016) analyzed sticky cost behaviors in 77 Jordanian industrial companies listed on Amman stock exchange between the years 2000 and 2013. The study reviewed cost stickiness in both SG&A and COGS. Although there were significant differences of each economy and corporate structures, when compared to the United States and Japanese studies, the study concluded that both SG&A and COGS showed a sticky cost pattern, with COGS being less stick than SG&A. It also concluded management behaviors were a contributing factor for cost stickiness Magheed (2016). Banker and Byzalov (2014) hypothesize and find that asymmetric cost behavior is agnostic to countries and is a 'global phenomenon'. Although, cost stickiness exists, its exact behavior is not consistent across firms, countries, industries. Baumgarten (2012).

Additionally, Banker and Byzalov (2014) reaffirm the 'mechanistic' relationship between sales and costs whereas 'fixed costs are predetermined, and variable costs reflect the consumption of variable resources conditional on current sales' Banker and Byzalov (2014). Banker and Byzalov (2014) reiterate the findings of Anderson et al. (2003), cite that although not as originally stated, the fundamental findings that management decisions are impactful to asymmetric behavior are to be considered. They also assert, costs are a determinant of earnings and therefore go hand-in-hand. Assuming this to be true, asymmetric cost behavior or cost stickiness could be impacted by management decisions which would affect corporate earnings and therefore increase compensation for performance-based employees.

### **SG&A expenses and earnings**

As mentioned earlier, this paper will focus solely on SG&A costs and the link between cost stickiness and earnings. SG&A costs are used in many cost stickiness studies as they are widely available and because of their characteristics, as they are easily influenced by managers Anderson et al. (2003). Additionally, SG&A costs more often have 'sticky' characteristics than other types of costs, Anderson, Banker, Huang, and Janakiraman (2007).

If SG&A costs increase proportionately to a reduction in sales this is considered a sign of inefficiency. In this case, assuming the managers believe the reduction in sales to be temporary, it's actually indicative of efficiency as the manager intends to maintain the costs of 'excess resources,' until sales have stabilized Homburg and Naves (2008). SG&A costs usually show more signs of 'stickiness' in a short period. SG&A costs observed to be 'sticky' in one period could be an indication managers are retaining unutilized resources therefore stickiness should be observed over multi-periods of time. An increase in the ratio of SG&A to sales between two periods is indicative of the firm's profitability and value Anderson et al. (2007).

Anderson et al. (2007) found in their study that SG&A costs change in revenue increasing and decreasing years and are positively associated with future earnings, whereas an increase in the SG&A cost ratio when revenue increases is negatively associated with future earnings. However, Baumgarten (2012) points out that there are a number of studies to contradict Anderson et al. (2007) 's theory. Baumgarten (2012) found a positive impact on earnings from a rising SG&A ratio on cost efficient firms versus a negative impact on earnings for cost-inefficient firms. Baumgarten's view was that it 'is crucial to differentiate' whether or not an increase in SG&A ratio occurs due to management behavior to increase profitability or insufficient cost control.

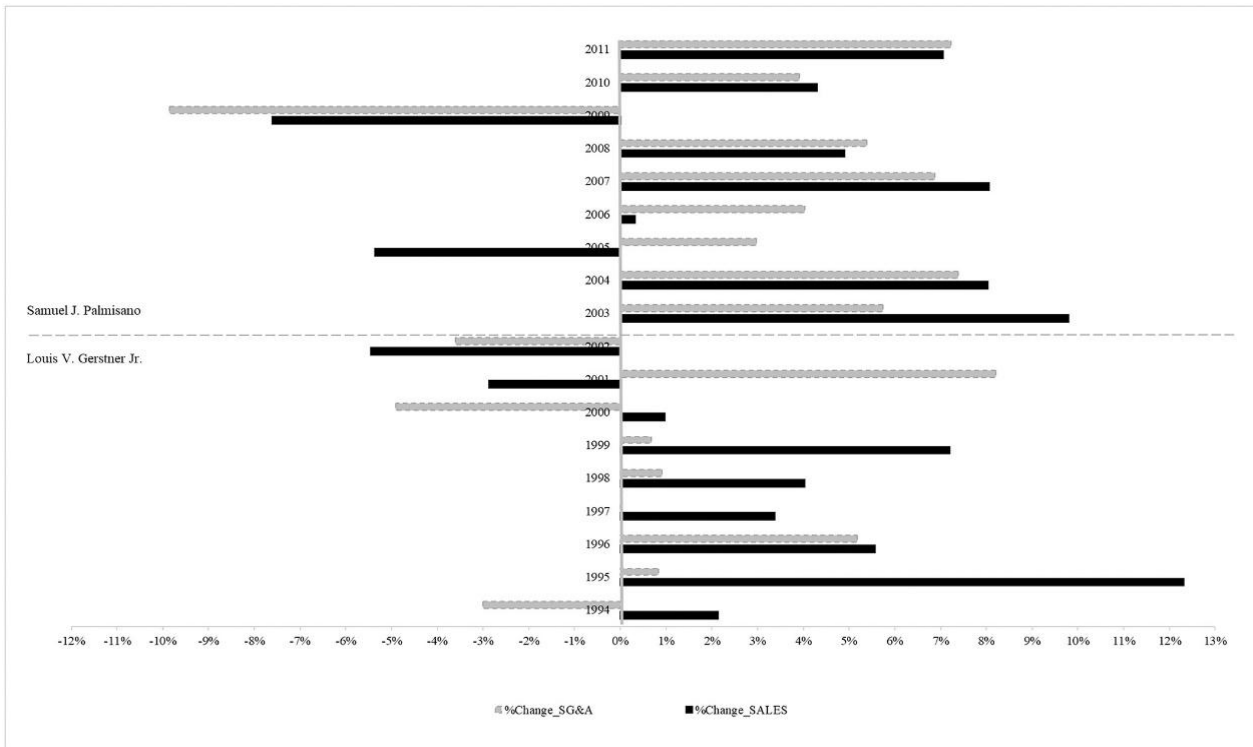
### **Management behaviors and the impact on cost stickiness**

According to Anderson et al. (2003), one of the main causes of asymmetric cost behavior is primarily led by 'management's behavior. Management's behavior has been a reoccurring theme in many of the studies researched for this paper. As evidenced in many of these studies Anderson et al. (2003), He et al. (2010) and Magheed (2016), management's decisions and/or lack of understanding of cost stickiness have proven to play a significant role in cost stickiness. Management's lack of understanding of sticky characteristics of SG&A can lead to inadequate decision-making Vela-Beltran-del-Rio and Reynoso (2018) and the self-interest of management can lead to poor decisions that are not in the best interests of the shareholders or the firm.

Cost stickiness can have a negative impact when managers interests do not align with shareholders' interest. Management becomes self-serving and known as 'empire-building'. In this scenario management is less likely to reduce costs or resources with a decrease in sales. This would result in asymmetric costs or cost stickiness. Management decisions that drive sticky costs include managers not revising overambitious investment decisions, afraid to lose status, and not wanting to layoff long-term employees Baumgarten (2012). Managers are motivated by incentives to grow the firm. This equates to greater compensation, a more prestigious reputation and 'higher visibility to the public' Lee, Park, Hyeon (2019).

In 2011, Itay and Weiss (2011) published a study to provide evidence managers acting in their own self-interest to reallocate resources to positively impact earnings targets, Itay and Weiss (2012). Their findings showed this did not contribute to cost stickiness. In 2020, Lopatta, Kaspereit, and Gastone (2020) published research to indicate otherwise. Their research was built from the existing research done on SG&A cost asymmetry. It concluded individual CEO's 'empire-building' behavior did contribute to the significant 'level of SG&A cost asymmetry and that this CEO-related excess cost asymmetry is associated with a lower shareholder value.

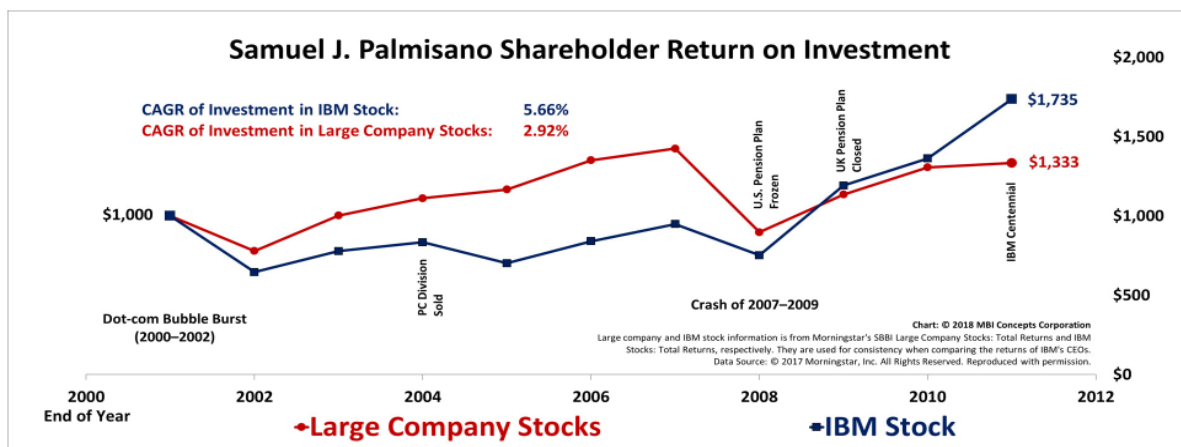
The following pages are graphs and chart evidencing CEO 'empire-building' within IBM. The first figure is taken from Lopatta et al. (2020) and is a graph that compares the change in percent of SG&A and percent of sales during the tenure of two different CEO's, Louis V. Gerstner Jr. and Samuel J. Palmisano. Louis V. Gerstner Jr. served as CEO from 1993-2002 and Samuel Palmisano from 2002-2011. This graph is indicative of significant cost asymmetry during the different tenures of both CEO's and possibly evidencing their materially different management leadership styles. The material differences in management's leadership styles during these years is widely known. Samuel J. Palmisano was known for his desire to significantly rebuild IBM and promote growth and change whereas Louis V. Gerstner Jr. was opposite and focused on simplifying the organization and working to become smaller and more efficient. The evidence to follow suggests CEO 'empire-building' will a negative impact on firms and to shareholders.



The graphs on the next page evidence IBM's shareholder returns during each CEO's tenure.<sup>3</sup>Each graph compares IBM stock's CAGR, or the compound annual growth rate during each CEO's tenure, in comparison to large company stocks. As a matter of background CAGR is the rate of return on investment that would be required for an investment to grow from its beginning balance to its ending balance, assuming profits are reinvested each year since inception-to-date. As evidenced on the graphs, during Samuel J. Palmisano's tenure, the IBM's stock CAGR was only at 5.66% versus 2.92% for large company stocks. During the tenure of Louis V. Gerstner, Mr. Palmisano's predecessor, IBM's CAGR was 30.3% versus 13.54% in large company stocks. All graphs combined suggest management style could have an impact on asymmetric cost behavior and that sticky costs are correlated with negative shareholder returns.

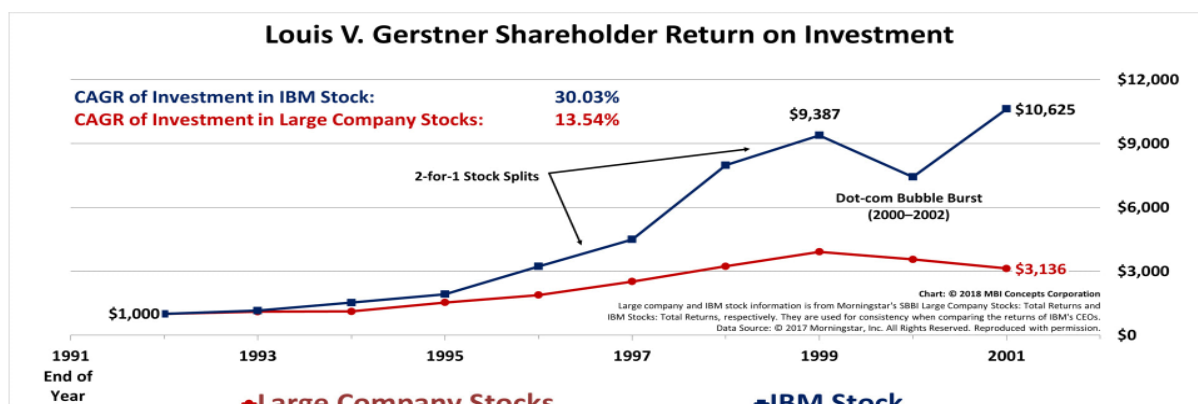
### Samuel J. Palmisano's Shareholder Returns

- Investment in IBM Stock: 5.66% CAGR
- Investment in Large Company Stocks: 2.92% CAGR



### Louis V. Gerstner's Shareholder Returns

- Investment in IBM Stock: 30.03% CAGR
- Investment in Large Company Stocks: 13.54% CAGR



Upon further research, it should be noted Louis V. Gerstner became CEO in April of 1993 when the company was suffering from huge losses, Zuckerman (1996). In July of 1993, Louis V. Gerstner took drastic measures to correct an imbalance in IBM expenditures. Gerstner/IBM completed the largest layoff in employment history by letting go 60,000 workers, Bobkoff (2016). It has been evidenced in previous excerpts of this paper that executive management's reallocation of resources i.e. layoffs contribute to asymmetric cost behavior. However, in this case it did not and actually decreased the *stickycost* pattern and increased value for shareholders. Louis V. Gerstner once said "If CEO compensation was performance-driven, which I believe it was in IBM's case, nobody would ever argue. If the shareholders didn't make billions and billions of dollars, I wouldn't make millions of dollars. My salary was the same for 10 years. It was all performance-based."

Chen, Gores, & Nasev (2013) proposed managerial overconfidence as an explanation for SG&A cost stickiness, documenting that SG&A increases with CEO overconfidence. Their study used a sample of 14,568 S&P firm-years between the period 1992 to 2011. They concluded that 'both empire builders and overconfident managers are likely to avoid cutting SG&A resources when they should, they differ in that empire-building CEOs keep excess resources for opportunistic reasons, whereas overconfident CEOs keep excess resources because they believe that they are acting in the best interest of the shareholders.' One might argue that the decision of Louis V. Gerstner to lay off 60,000 workers in 1993 was the opposite of being neither an overconfident manager or 'empire building'. As evidenced earlier, there were *less* sticky costs at IBM during his tenure and the return on investment was extremely more significant than his successor.

### Ethical issues and compensation

Ethical issues that arise for managers begin with the question, are they making the best decision(s) for their firm, rather than their own self-interest? If management decisions lead to asymmetric cost behavior is this good or bad? One of the concerns is cost stickiness is known to associate with negatively impacting earnings but the question remains -does cost stickiness translate into better compensation? There are many different ways managers can be opportunistic. They can manipulate resources in an attempt to increase earnings or decrease earnings, in order to benefit their own agendas. For example, when 'empire building' CEOs fail to cutback resources as sales decrease is an example of management wanting to grow the firm to a greater size rather than the optimal one, Lee, Park, Hyeon (2019). Additionally, you have situations where management seeks to manipulate expenses to increase earnings. All of these can lead to asymmetric cost behavior.

In one study, Kwon (2018) examined 'whether option grants awarded to the CEOs drive asymmetric behavior of SG&A cost' and the benefit it would have to the CEO. This study obtained data on CEO compensation variables from ExecuComp database for the period 1992-2005 related to US firm and excluded financial institutions. This study found that managers who expected to receive large option awards intentionally delayed 'the reduction of slack in SG&A costs to lower the exercise price of stock-option awards. It also evidenced there was a correlation between higher option grants versus a higher occurrence for cost stickiness, suggesting that managers intentionally make resource decisions to impact option exercise prices.

Baumgarten (2012) interpreted 'self-interested' managers as the second leading cause of sticky cost behavior. His study points out, if designed properly, corporate governance can mitigate these issues by reducing empire building incentives. Lee, et al. (2019) studied single versus co-CEO corporate structures.

Their study investigated both types of CEO structures and which was more likely to contribute more to asymmetric cost behavior. They found that cost stickiness was least likely to be found in a co-CEO structure than a single CEO. The dual CEO roles served as 'an alternative internal corporate governance tool for mitigating' decisions that would result in sticky costs Lee, et al. (2019). In a study by Xu and Hong (2016) they found that good corporate governance has a negative impact on cost stickiness.

## Conclusion

Cost stickiness is a phenomenon happening around the world and affecting all industries. There is still much more extensive gap research required. The purpose of this paper is to investigate whether management behavior impacts asymmetric cost behavior and earnings, as these go hand-in-hand, and if so, how does this impact management compensation, and what are the ethical issues they face? That being said, the conclusion of this paper assumes that asymmetric cost behavior is a result of management behaviors and decisions by management will have an impact on cost behaviors impacting earnings. Since it is widely assumed management is compensated on a performance-based basis, earnings and firm growth play pivotal role in this research. Unfortunately, due to the lack of access to historical compensation, it is impossible to conclude 100%, that cost stickiness does have an impact compensation, whereas management benefits via compensation from making decisions that result in asymmetric cost behavior.

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