

Management Characteristics and Cost Stickiness: An Examination Based on Agency Theory

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Abstract

Understanding how costs behave is a vital and critical issue for managers, management accountants, and financial analysts. Using agency theory, this paper addresses the empirical question of whether the management characteristics can help explain the cost stickiness as managerial behavior in the Tehran Stock Exchange. Utilizing a panel data regression model, we examined the data to determine the interaction impact of management characteristics as non-executive managers, managerial ability, overconfidence, and earnings management on cost stickiness of 165 firms, for the period 2009 to 2018. Results show that the entrenchment effects of non-executive managers increase the positive influences of managerial ability on overconfidence and as overconfidence increase, earnings management are also increasing consequently leads to an increase in cost stickiness. This means that when non-executive managers are excessively confident in their abilities, they are more likely to engage in opportunistic activities and earnings management. In these cases, managers report excessive cost overruns when there is a slight increase in company sales, resulting in increased cost stickiness. This study contributes by providing evidence on asymmetric cost behavior concerning management characteristics from one of the emerging economies. Further, the study extends the very few studies on the relationship between management characteristics and cost stickiness.

Keywords: Cost stickiness, Earnings management, Managerial ability, Non-executive managers and Overconfidence.

Introduction

Cost stickiness was first introduced by Anderson et al. (2003), it is characterized by a greater magnitude of increase in a firm's costs when its operations expand than the magnitude of the cost decrease when its operations contract by an equivalent amount (Chung et al., 2019). In form of an agency contract, determinative factors in cost stickiness phenomena have been seen by prior research (Calleja et al. 2006; Chen et al. 2008; Chung et al. 2019). The decisions managers make

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in these situations can be influenced by personal considerations, which lead to agency problems (Anderson et al., 2003). Jensen and Meckling (1976) predict agency problems arise when an agent acts on behalf of a principal and the agent has some authority to make decisions. According to agency theory, management expansionist motivation causes high-level cost stickiness (Koo et al., 2015). On the contrary, earning management motivation makes low-level cost stickiness (Dierynck et al., 2012; Kama and Weiss, 2012). Thus, management characteristics are factors affecting the cost stickiness level. Hence, we start by developing a model that lays out a theoretical foundation explaining why management characteristics as non-executive managers (Elsayed and Ibrahim, 2018), managerial ability (Baik et al., 2011), overconfidence (Kuang et al., 2015) and earnings management (Xue and Hong, 2016; Fallah Mojdehi, 2017) have an influence on asymmetric cost behavior.

Current research explores how one of the main internal corporate governance practices could impact on cost behavior asymmetry. We predict that board characteristics (e.g., non-executive managers) could influence managerial decisions by controlling and monitoring, and therefore could influence cost behavior. In addition, non-executive managers enhanced the managerial ability for the profitability of a firm (Elsayed and Ibrahim, 2018). The mangers with a high ability provide suitable performance. Therefore, while activity levels are reduced, capable managers can mitigate the cost-stickiness level through reducing costs. However, we predict that cost stickiness is greater when firms are managed by overconfident managers. Owing to overconfident managers are more likely to overestimate future demand and therefore less likely to cut sales and general administrative (SG&A) expenses when sales mitigate (Chen et al., 2013).

Each one of the management characteristics can be a remarkable effect on cost stickiness: high-ability managers are aware of cost stickiness destructive effects in a long time and they are less tendency to do so. The higher level of non-executive manager's as a proxy of good corporate governance that leads to reduce the agency problems and consequently to reduce cost stickiness. Overconfident managers have expectations beyond reality about firms and due to realize their expectations, sometimes they do earnings management, through cost stickiness. on one hand, based on agency theory, managers forgive more compensation do upward earnings management that leads to less cost stickiness; on the other hand, some managers owing to create an empire-building do downward earnings management and consequently, use cost stickiness.

However, missing from the literature is evidence about the impact of management characteristics and cost stickiness on a comprehensive measure of firms' information environment. Our study seeks to fill this void.

Management characteristics and cost stickiness

Non-executive managers and cost stickiness

Huse (1998) shows that a higher percentage of non-executives makes them more supporters of all stakeholders. Empirically, many types of research document that a high ratio of non-executives on boards is a symbol of solid corporate governance (Pass, 2004; Haniffa and Fallah Mojdehi, 2017). Corporate governance is the set of structures that control or encourage managers when there is a separation of ownership and management. These structures are made to mitigate the agency problem. The institutional theory stated that encouraging and controlling are vital ways to mitigate the agency problem (Blair, 1995). Controlling plays a key role in solid corporate governance. That will be the mitigating of management opportunism while protecting stakeholders' interests. Occasionally, the self-interested behavior of managers leads to expense

stickiness (Chen et al., 2008; Xue and Hong, 2016). In its controlling role, solid corporate governance should, to some degree, reduce expense stickiness. Concerning the vital role of corporate governance, we predict solid corporate governance leads to mitigating cost stickiness. Thus, recent research shows that separation of duties and independence are vital characteristics of board that can enhance the corporate governance quality as a whole, and this segregation will affect positively the managers' decisions including the decisions about the cost, and therefore cost behavior. This means that non-executive managers can be reduced the asymmetric cost behavior. Based on the above arguments, we develop the following hypothesis.

H_{1a}: There is a negative relationship between non-executive managers and cost stickiness levels.

Managerial ability and cost stickiness

Based on the managerial ability literature, we assert that managerial ability is likely to affect earnings management. In other words, we believe that high-ability managers are associated with fewer earnings management. There are many reasons for the negative relationship between managerial ability and earnings management. First, more-able managers can provide higher sales revenue for a specified set of resources the firm owns (Demerjian et al., 2012). Thus, they are less tendency for earnings management. Second, managers with high ability know a destroyed impact of earnings management on future firm value (Huang and Sun, 2019). Ultimately, the opportunity cost is a factor affecting the managers' decision-making process. Owing to high-ability managers would rather earmark greater attempt to the common operations than to earnings management. Recent research contends that earnings management helps in the avoidance of reporting small losses and earnings decreases (e.g. Burgstahler and Dichev, 1997; Xue and Hong, 2016). And, as a result, managers mitigate costs to avoid reporting losses or earnings decreases. According to the mentioned incentives, managers will moderate costs to obtain predicted earnings.

Therefore, managers may be more inclined to reduce costs when facing declining sales revenue, or less willingness to increase costs when faced with work, if this means that they avoid reporting an earnings decrease or a loss. This represents a low-level of asymmetric cost or a high-level of asymmetric cost model in these firms in comparison with firms without earnings management motivations. Thus, we hypothesize the following:

H_{1b}: There is a negative relationship between managerial ability and cost stickiness level.

Overconfidence and cost stickiness

Recent research asserts that overconfidence as a behavioral factor can lead to expense/cost stickiness. Researchers are trying to provide empirical evidence about the role of management behavior in cost management (Cordiero, 2009; Yasakuta and Kajiwara, 2011; Chen et al., 2013; Qin et al., 2015). According to previous research, the manager's overconfidence causes an increase in the degree of SG&A costs sticky. Decision making about mitigating or maintains SG&A cost's additional level when sales revenue is reduced depends on managers' expectations about future demand. Recent research arguments refer to overconfidence will overestimate the correctness of their assessment of future demand, which will also increase the probability of keeping excess SG&A resources resulting in greater SG&A cost stickiness (Chen et al., 2013). The following hypothesis tests this proposition.

H_{1c}: There is a positive relationship between overconfidence and cost stickiness level.

Earnings management and cost stickiness

Cost stickiness is a current issue in accounting literature and has shown that cost stickiness is a function of managerial motivation (Xue and Hong, 2016). In line with this, based on agency theory, we explained the relationship between earnings management and cost stickiness from two viewpoints including upward earnings management and downward earnings management. When the sale revenue is mitigating, the managers prefer to reduce costs, due to internal and external pressure. Concerning upward earnings management make a double pressure; thus, they show asymmetric cost behavior to achieve the firms' long term development (Koo et al., 2015). In other words, earnings management motivations more likely to lead to less than cost stickiness. On the other hand, downward earnings management as a consequence of empire-building purposes more likely leads to more than cost stickiness. That means the conflicting interest between managers and shareholders and self-orientation that applied by manager's leads to higher cost stickiness (Chen et al., 2008; Banker et al., 2011; Banker et al., 2012). Thus, a large body of literature highlights that downward earnings management is a factor affecting cost stickiness. In line with this, we develop the following hypothesis.

H_{1d}: There is a positive relationship between earnings management and cost stickiness levels.

Interaction relationship between non-executive managers and managerial ability on cost stickiness

One of the reasons, we assert board structure is important is related to firm performance. There is a large body of literature about the asymmetric impact board structure on performance (Fama and Jensen, 1983; Bennedsen et al. 2004; Adams and Mehran, 2005; Dalton and Dalton, 2005; Petra, 2007). Briefly, the first viewpoint refers to that executive managers enhance firm performance through a better understanding of the firm's needs. But in current research, we focused on the second viewpoint that states non-executive managers mitigate agency problems by monitoring and controlling. Finally, they can decrease agency costs. This means those executive managers controlled by non-executive managers. This is a factor affecting decreasing conflict interest between managers and shareholders. The current argument is complying with Fama and Jensen (1983). They believe that non-executive managers have a higher incentive to maximize shareholder wealth because they are worried about their reputation. In line with this, the managerial ability can have improved by non-executive managers' activities. This is essentially to improve the managerial ability through effective use of firm resources. According to the previous argument, non-executive managers can do this. Thus, we predict that non-executive managers increase the negative influences of managerial ability on cost stickiness. Accordingly, the second hypothesis is expressed as follow:

H₂: The entrenchment effects of non-executive managers increase the negative influences of managerial ability on cost stickiness.

Interaction relationship among non-executive managers, managerial ability, and overconfidence on cost stickiness

As described above hypothesis (H₂) managerial ability can have improved by non-executive managers' activities. based on prior study, we are faced with two viewpoints about managerial ability: according to the first viewpoint high-ability managers can be caused to increase the wealth of stakeholders by utilizing his intelligence and talents as well as the efficient use of assets (An and Zhang, 2013; Callen and Fang, 2013; Kim and Zhang, 2016). But the second viewpoint express that high-ability manager due to their high level of intelligence and talents, they have a

high degree of confidence and estimate the return on investment more than real and they may invest in projects with the negative net present value that is led to harmful consequences for stakeholders. Thus, we are faced with overconfidence, which in these managers consider their knowledge and skills too much and estimate risk at a low level (Kim and Lu, 2011; Kim et al., 2016; Andreou et al., 2016). Therefore, we predict that non-executive managers increase the positive influences of managerial ability on overconfidence and finally lead to an increase in cost stickiness. Accordingly, the third hypothesis is expressed as follow:

H₃: The entrenchment effects of non-executive managers increase the positive influences of managerial ability on overconfidence and consequently the increase in overconfidence leads to an increase in cost stickiness.

Interaction relationship among non-executive managers, managerial ability, overconfidence, and earnings management on cost stickiness

Based on previous discussions, we know non-executive managers caused to increase in the positive influences of managerial ability on overconfidence by increase the managerial ability. Overconfidence increase managers' expectations. Since the managers' behavior is the function of their expectations; based on egoism, we predict managers employ sticky behavior to reach self-interest. Earnings management process can mean complicated reporting refers to managers' tendency to a specific expectations profitability level. Managers' expectations will be increased due to their overconfidence. While managers cannot meet their expectations, they ultimately employ earnings management. Based on the prior segments' argument, we expect earnings management to influence cost stickiness. Consequently, we predict that non-executive manager's increase the positive influences of managerial ability on overconfidence and as overconfidence increase, earnings management are also increasing, and finally cause to influence on cost stickiness. Accordingly, the fourth hypothesis is explained as follow:

H₄: The entrenchment effects of non-executive managers increase the positive influences of managerial ability on overconfidence and as overconfidence increase, earnings management is also increasing consequently leads to an increase in cost stickiness. Conceptual framework of the current study shown in figure 1.

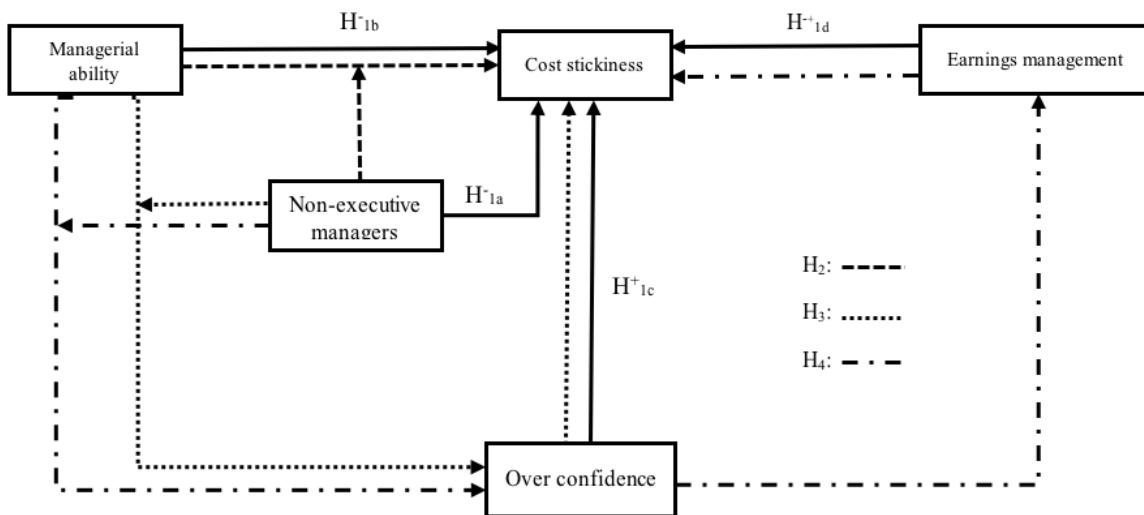


Figure 1. Research Conceptual Model

Empirical models and additional tests

We drop observations with missing values on the variables utilized in current research. The data derives mainly from audited financial statements and board's reports of the TSE, and Rahavard Novin software. The population of the study encompasses all TSE firms for the period 2009–2018. However, the study compiles a purposive sampling; thus, financial firms such as banks and insurance firms are absent because they have different conditions in relation to firm characteristics. Listing firms must also have continuous operations during the period of the study, and their information must be available. Following these criteria, the study includes 165 firms (1650 firm-year). In this research, sample companies were selected applying the following limitations.

- A) For similarity, the companies whose fiscal year does not match with 29th Esfand (in the Iranian calendar) were excluded;
- B) Banks and insurance companies were excluded from the study due to the different conditions governing investment companies;
- C) Companies with trading interruptions of over three months were excluded to ensure balanced business transactions of companies during a fiscal year; and
- D) Companies having incomplete data were excluded from the study.

The model shown as Equation (1) is based on the prior literature research (Ibrahim, 2018; Chung et al., 2018). To examine H_{1a}, H_{1b}, H_{1c}, and H_{1d} we estimate this equation (1) without the interaction term. A significantly negative β_1 indicates support for H_{1a}. A significantly negative β_2 indicates support for H_{1b}. A significantly positive β_3 indicates support for H_{1c}. And a significantly positive β_4 indicates support for H_{1d}.

$$\begin{aligned} \text{COSTS}_{i,t} = & \beta_0 + \beta_1 \text{NONE}_{i,t} + \beta_2 \text{MANA}_{i,t} + \beta_3 \text{OVEC}_{i,t} + \beta_4 \text{EM}_{i,t} + \beta_5 \text{SIZE}_{i,t} + \beta_6 \text{LEV}_{i,t} \\ & + \beta_7 \text{LOSS}_{i,t} + \beta_8 \text{GROWT}_{i,t} + \beta_9 \left(\frac{Y}{S} \right)_{i,t} + \beta_{10} \left(\frac{K}{S} \right)_{i,t} + \beta_{11} \left(\frac{M}{B} \right)_{i,t} + \beta_{12} \text{CONS}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

To examine H₂ we estimate this equation (2) with the *NONE*MANA* interaction term.

$$\begin{aligned} \text{COSTS}_{i,t} = & \beta_0 + \beta_1 \text{NONE}_{i,t} + \beta_2 \text{MANA}_{i,t} + \beta_3 \text{NONE}_{i,t} * \text{MANA}_{i,t} + \beta_4 \text{SIZE}_{i,t} \\ & + \beta_5 \text{LEV}_{i,t} + \beta_6 \text{LOSS}_{i,t} + \beta_7 \text{GROWT}_{i,t} + \beta_8 \left(\frac{Y}{S} \right)_{i,t} + \beta_9 \left(\frac{K}{S} \right)_{i,t} + \beta_{10} \left(\frac{M}{B} \right)_{i,t} + \beta_{11} \text{CONS}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

To examine H₃ we estimate this equation (3) with the *NONE*MANA*OVEC* interaction term.

$$\begin{aligned} \text{COSTS}_{i,t} = & \beta_0 + \beta_1 \text{NONE}_{i,t} + \beta_2 \text{MANA}_{i,t} + \beta_3 \text{OVEC}_{i,t} + \beta_4 \text{NONE}_{i,t} * \text{MANA}_{i,t} * \text{OVEC}_{i,t} + \beta_5 \text{SIZE}_{i,t} \\ & + \beta_6 \text{LEV}_{i,t} + \beta_7 \text{LOSS}_{i,t} + \beta_8 \text{GROWT}_{i,t} + \beta_9 \left(\frac{Y}{S} \right)_{i,t} + \beta_{10} \left(\frac{K}{S} \right)_{i,t} + \beta_{11} \left(\frac{M}{B} \right)_{i,t} + \beta_{12} \text{CONS}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (3)$$

To examine H₄ we estimate this equation (4) with the *NONE*MANA*OVEC*EM* interaction term.

$$\begin{aligned} \text{COSTS}_{i,t} = & \beta_0 + \beta_1 \text{NONE}_{i,t} + \beta_2 \text{MANA}_{i,t} + \beta_3 \text{OVEC}_{i,t} + \beta_4 \text{EM}_{i,t} + \beta_5 \text{NONE}_{i,t} * \text{MANA}_{i,t} * \text{OVEC}_{i,t} * \text{EM}_{i,t} \\ & + \beta_6 \text{SIZE}_{i,t} + \beta_7 \text{LEV}_{i,t} + \beta_8 \text{LOSS}_{i,t} + \beta_9 \text{GROWT}_{i,t} + \beta_9 \left(\frac{Y}{S} \right)_{i,t} + \beta_{10} \left(\frac{K}{S} \right)_{i,t} + \beta_{11} \left(\frac{M}{B} \right)_{i,t} + \beta_{12} \text{CONS}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (4)$$

Consistent with the literature (Anderson et al., 2003; Subramaniam and Weidenmier, 2003), we use the following logarithmic model to measure expense stickiness:

$$\log \left[\frac{SGA_{i,t}}{SGA_{i,t-1}} \right]$$

Where; SGA is total administration and operation expenses. The $MANA$ is the percentage of Non-executive managers. $MANA$ is management ability evaluating the efficiency of managers using the (MA) privilege. This variable is measured using Data Envelopment Analysis (DEA) method. Capable and effective managers are those who earn a higher rate from the ratio of inputs to definite outputs on the way for creating incomes and compared with other managers. Therefore, optimization model Demirjian et al. (2012) is used as follows:

$$\max_{\theta} \theta = \frac{\text{Sales}}{v_1 COGS + v_2 SG\&A + v_3 PPE + v_4 OpeLease + v_5 R\&D + v_6 Goodwill + v_7 otherIntan}$$

Where; Variables of net sales, cost of goods sold, selling and administrative costs, property, plant and equipment, operating rental costs, expenditures of research and development, lease and other intangible assets have been used. The $OVEC$ is overconfidence managers that according to Ahmad and Dolman (2003), the residual of the regression model of asset growth on sales growth based on year and industry is used follow:

$$AG_{i,t} = \beta_1 + \beta_2 SG_{i,t} + \epsilon_{i,t}$$

EM is accrual-based earnings management. We estimate discretionary accruals using the performance modified Jones (1991) model as proposed by DeFond and Jiambalvo (1994) and Kothari et al. (2005). In the model, we regressed total accruals on the difference between the change in revenue and change in receivables, gross property, plant, and equipment, and return on assets. The model used for the estimation is:

$$\frac{ACC_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \alpha_2 \left(\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} \right) + \alpha_3 \left(\frac{PPE_{i,t}}{A_{i,t-1}} \right) + \alpha_4 ROA_{i,t} + \epsilon_{i,t} \quad (5)$$

$SIZE$ is the firm's size. The LEV shows financial leverage. The $LOSS$ shows the loss of the firm. The Y/S shows yield to sales ratio. The K/S shows gross property, plant, and equipment to sales ratio. MB is market to book value ratio. And $CONC$ is a conditional conservative accounting measurement model by Ball & Shivakumar (2005), namely asymmetric accrual to cash-Flow.

$$ACC_{i,t} = \beta_0 + \beta_1 DCFO_{i,t} + \beta_2 CFO_{i,t} + \beta_3 DCFO_{i,t} * CFO_{i,t} + \epsilon_{i,t} \quad (6)$$

Results

Univariate results

Table 2 presents the summary statistics of the variables. And figure 2 shows the trend of management characteristics in the period 2009-2018. We utilized the one-way analysis of variance test (ANOVA) and Kruskal-Wallis test because will determine the difference between industrial sectors based on explanatory and control variables (see Table 2). Furthermore, correlation analysis, as it is demonstrated in Table 3.

After data collection, we must insure its stationary and non-stationary to avoid false regression. Since the applied regression method is ordinary data, so the ADF-Fisher tests were used. Results are shown in Table 4.

Table 1. Variable definition

| Variable | Definition and description |
|--|---|
| Stickiness cost (COST) | We use natural logarithm selling and administrative costs in year t to year $t-1$ ratio; |
| selling and administrative costs (SGA) | Selling and administrative costs; |
| Non-executive managers (NONE) | Percentage of Non-executive managers; |
| Management ability (MANA) | We use model Demirjian et al. (2012) to measure management ability; |
| SALES | Net sales; |
| COGS | Cost of goods sold; |
| Property, plant, and equipment (PPE) | is the gross value of property, plant, and equipment; |
| OPELEASE | Operating rental costs; |
| R&D | Expenditures of research and development; |
| GOODWILL | Goodwill; |
| OTHERINTAN | Other intangible assets; |
| Over confidence managers (OVEC) | We use the model residual Ahmad and Dolman (2003) to measure over confidence managers; |
| AG | Asset growth; |
| SG | Is the one year percent change in sales from in year $t-1$ to year t . |
| Earnings management (EM) | We use discretionary accruals to measure accounting earnings management based on the model (1); |
| Accrual (ACC) | Where ACC is the total accruals in year t defined as earnings before extraordinary items and discontinued Operations minus operating cash flows (from continuing operations); |
| Asset (A) | Denotes the total assets in year $t-1$; |
| Change sales (Δ REV) | is the change in net sales from year $t-1$ to year t ; |
| (Δ REC) | is the change in account receivables from period $t-1$ to t ; |
| Return-on-assets (ROA) | Annual income before extraordinary items divided by beginning total assets; |
| Firm size (SIZE) | Natural log of total asset; |
| Leverage (LEV) | Defined as total debt divided by total assets; |
| LOSS | is equal to 1 if net income is less than zero in the year t , 0 otherwise. |
| YS | Yield divided sales |
| KS | PPE divided sales |
| MB: Market -to- Book ratio (MB) | Market value of common equity divided by book value of common equity; |
| Accounting conservatism (CONS) | Conditional conservative accounting measurement model by Ball & Shivakumar (2005) (See Model 6); |
| DCFO | Dummy cash-flow operation, if 0, $CFO_{it} \geq 0$, and if 1, $CFO_{it} < 0$; |
| CFO | Cash flow from operation of company i in year t or Cash Flow for t period. |

Table 2. Descriptive statistics and non-parametric method for comparing industrial sectors.

| Variable | Mean | Median | St.d | Max | Min | Obs | Panel B. ANOVA and Kruskal-Wallis of variables across a Twenty-four industrial sectors. | |
|----------|---------|---------|--------|--------|---------|------|---|-----------------------------|
| | | | | | | | ANOVA (F) | Kruskal-Wallis (χ^2) |
| COSTS | 0.1741 | 0.1628 | 0.3090 | 2.1565 | -1.9234 | 1650 | 1.0871 | 38.3524** |
| NONE | 0.6509 | 0.6000 | 0.1986 | 1.0000 | 0.000 | 1650 | 13.0110*** | 256.9126*** |
| MANA | 0.0476 | 0.0517 | 0.0213 | 0.0802 | -0.0736 | 1650 | 20.215*** | 38.874*** |
| OVEC | -0.0039 | -0.0147 | 0.2864 | 1.2152 | -1.4990 | 1650 | 1.3015 | 28.3471 |
| EM | -0.0195 | -0.0379 | 0.2439 | 2.6959 | -1.4727 | 1650 | 12.4599*** | 361.2193*** |
| SIZE | 13.8185 | 13.6222 | 1.5027 | 19.133 | 9.8808 | 1650 | 8.9154*** | 327.2967*** |
| LEV | 0.6147 | 0.6219 | 0.1956 | 1.7772 | 0.0901 | 1650 | 3.2140*** | 471.0289*** |
| GROWTH | 0.1579 | 0.1391 | 0.2950 | 1.5315 | -1.1936 | 1650 | 1.6442** | 41.4708** |
| YS | 0.1398 | 0.1151 | 0.1892 | 0.7789 | -0.9397 | 1650 | 11.2436*** | 502.5455*** |
| KS | 0.4061 | 0.2501 | 0.4317 | 3.2099 | -0.0231 | 1650 | 14.9130*** | 139.1165*** |
| MB | 2.4550 | 2.1265 | 1.5504 | 7.8096 | -1.4493 | 1650 | 9.3133*** | 207.8831*** |
| CONS | -0.0004 | 0.0016 | 0.1239 | 0.9545 | -1.4031 | 1650 | 0.2146 | 36.6423** |
| LOSS | 0.1175 | 0 | 0.3222 | 1 | 0 | 1465 | 5.1451*** | 111.8699*** |

All variables are as defined in the table 1. * $p<0.05$ ** $p<0.01$ *** $p<0.001$

Table 3. Correlation matrix (All variables are as defined in the table 1)

| | COSTS | NONE | MANA | OVEC | EM | SIZE | LEV | LOSS | YS | KS | MB | GROWTH | CONS |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|--------|---------|------|
| COSTS | 1 | | | | | | | | | | | | |
| NONE | -0.0184 | 1 | | | | | | | | | | | |
| MANA | 0.2371 | 0.0296 | 1 | | | | | | | | | | |
| OVEC | 0.2076 | -0.0086 | -0.2249 | 1 | | | | | | | | | |
| EM | 0.0223 | -0.0145 | -0.0514 | 0.0347 | 1 | | | | | | | | |
| SIZE | 0.0708 | -0.0419 | -0.1546 | 0.0576 | -0.0395 | 1 | | | | | | | |
| LEV | -0.0009 | -0.0910 | -0.1811 | -0.0396 | 0.0476 | 0.0300 | 1 | | | | | | |
| LOSS | -0.0431 | -0.0273 | -0.0116 | -0.1124 | 0.0109 | -0.1028 | 0.3370 | 1 | | | | | |
| YS | 0.0457 | 0.0880 | 0.1303 | 0.0817 | -0.0445 | 0.2049 | -0.5690 | -0.5345 | 1 | | | | |
| KS | 0.0328 | 0.1405 | 0.2481 | -0.0213 | -0.0755 | 0.1331 | -0.0776 | 0.1088 | 0.0611 | 1 | | | |
| MB | 0.0791 | 0.0672 | 0.0553 | 0.0480 | -0.0420 | -0.0055 | -0.0189 | -0.0296 | 0.1714 | -0.0841 | 1 | | |
| GROWTH | 0.2382 | -0.0073 | -0.2528 | 0.9590 | 0.0443 | 0.1090 | -0.0630 | -0.1409 | 0.1269 | -0.0057 | 0.0686 | 1 | |
| CONS | -0.0071 | 0.0094 | 0.0259 | -0.0409 | 0.0157 | 0.0320 | -0.0101 | -0.0059 | 0.0232 | -0.0270 | 0.0207 | -0.0458 | 1 |

Table 4. ADF-Fisher, Null: Unit root (assume common Unit root test)

| Variables | t-statistics |
|-----------|--------------|
| COSTS | 936.042*** |
| NONE | 388.339*** |
| MANA | 425.365*** |
| OVEC | 971.006*** |
| EM | 1066.591*** |
| SIZE | 634.254*** |
| LEV | 653.029*** |
| LOSS | - |
| GROWTH | 909.635*** |
| YS | 766.035*** |
| KS | 731.714*** |
| MB | 508.361*** |
| CONS | 850.597*** |

All variables are as defined in the table 1. * $p<0.05$ ** $p<0.01$ *** $p<0.001$

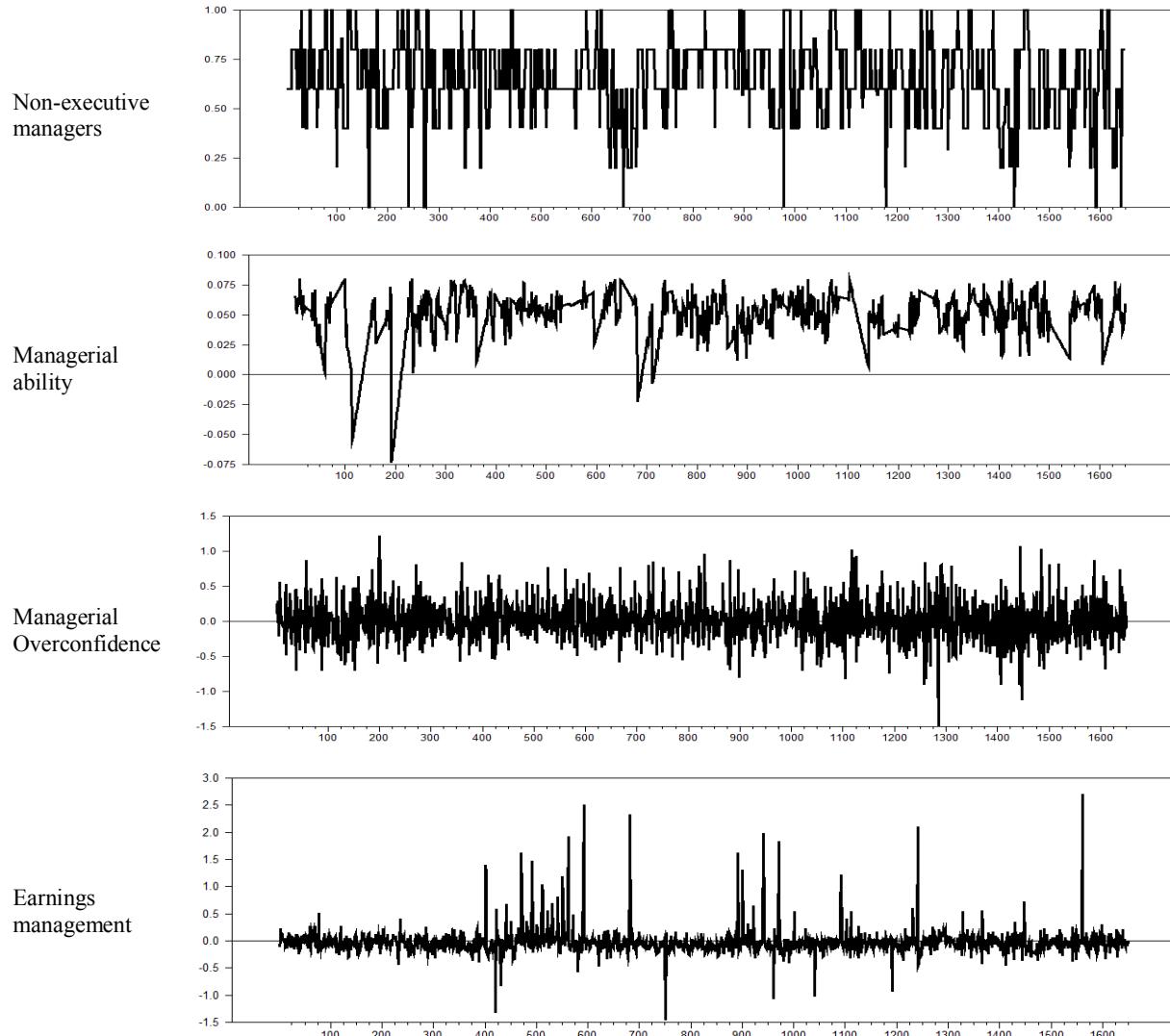


Figure 2. The trend of management characteristics.

Econometrics results

The results show that H_{1a} , H_{1b} , H_{1c} and H_{1d} are confirmed (-0.060, $t=-2.01$; -0.062, $t=-2.13$; 0.266, $t=7.6$; -0.054, $t=-0.30$; respectively). Non-executive managers can prevent cost stickiness activities through sufficient monitoring of the firm's cost policies. Calleja et al. (2006) show that corporate governance systems influence cost stickiness. Non - executive managers as the most important corporate governance mechanism can lead to a decrease in agency problems as well as agency costs. This occurs through efficient monitoring of the manager's behavior. It means that non-executive managers banning managers from raising costs in response to increasing demand. And in the opposite, encouraging the managers to reduce costs in response to decreasing demand.

The negative and significant relationship between managerial ability and cost stickiness based on that higher-ability level managers provide a high level of a firm's profitability; this can more likely lead to lower earnings management. Ultimately, the cost stickiness process will be declined. As discussed earlier, overconfidence as another management's feature causes to invest

in projects with negative net present values, which can force the firm's manager to do earnings management that finally leads to increase in cost stickiness.

According to accounting literature, earnings management is divided into two groups: upward earnings management and downward earnings management. The lack of a significant relationship between earnings management and cost stickiness (-0.054, $t=-0.30$) can be due to other factors; which have been studied separately and together in current research.

According to the above mentioned, the result shows the negative and significant relationship between managerial ability and cost stickiness. However, we used the NONE*MANA variable to be able to measure the effect of one of the other corporate governance mechanisms, that is, non-executive managers as a moderating variable on the relationship between managerial ability and cost stickiness. The results showed that non-executive managers enhanced the negative relationship between managerial ability and cost stickiness (-1.190, $t=-2.06$). This means that, non-executive managers through the effects on financial systems, the optimal use of cash, and..., can improve positive aspects of managerial ability and to play an important role in choose of higher-ability managers.

We used the NONE*MANA*OVER variable to be able to measure the influence of one of the other managerial characteristics (-0.125, $t= -4.032$). Econometrics results indicated, do not increase the positive impact of managerial ability on overconfidence and consequently, do not increase the positive impact of cost stickiness. It shows that non-executive managers may not be able to use their monitoring instruments properly. Because the executive manager's overconfidence can be a factor that mitigates the monitoring power of non-executive managers (see Table 5).

The most important management behavioral characteristic that will be analyzed is earnings management. We need to understand that how this variable can be moderated the effect of managerial features on cost stickiness. Therefore, in the fourth model, we used the NONE*MANA*OVER*EM variable to examine the fourth hypothesis (-0.429, $t= -1.65$). Although based on the third hypothesis result, managerial overconfidence can't have explained the relationship between managerial characteristics and cost stickiness. But the fourth hypothesis results show that earnings management could mitigate the negative effect of overconfidence. This reduction means that earnings management is an alternative instrument for preventing the negative consequences of overconfidence. In other words, in this study simultaneity effects of four managerial features on cost stickiness have been negative.

Conclusion remark

The present research extends the cost stickiness literature by providing new evidence from emerging economies and by investigating the impact of managers' characteristics. According to the previous research, there is a significant relationship between the agency problem and cost asymmetry (Malmendier and Tate, 2008; Chen et al. 2012; Bradburyand Scott, 2018 and Lopatta et al. 2020). The results of this study can be expressed in terms of the personal motivations of managers. Thus, by explaining the effects of managers' characteristics on cost asymmetry, this study provides a broader view of managers' role in cost adjustment when faced with demand fluctuations. According to the results of the first hypothesis (Table 5), non-executive managers through overseeing the financial performance of managers, diminish the processes that lead to cost stickiness. Firms should use a structure in which the behavior of the executive managers is controlled by the non- executive managers, and therefore, the conflict of interest between management and shareholders will be decline. However, the most effective board consists of

members in which balance is between the executive and the non - executive managers because a severe imbalance in favor of either hand will shift the balance of power into the wrong hand. Increasing the number of non-executive managers can reduce agency costs associated with utilizing investment opportunities. The monitoring by a larger percentage of non-executive managers improves the impact of growth opportunities on financial performance. An examination of the relationship between managerial ability and cost stickiness show that capable manager provides a report with low quality of accrual, high earnings smoothing, and also high real earnings management; and as the result cost stickiness is decreased.

Table 5. Regression result for specified hypotheses

| Variable | Model(1) | Model(2) | Model(3) | Model(4) |
|----------------------|-----------------------|---------------------|----------------------|----------------------|
| NONE | -0.060** (0.030) | -0.583* (0.315) | -0.054** (0.027) | -0.124*** (0.012) |
| MANA | -0.062 (0.029) | -0.931** (0.409) | -0.025 (0.046) | -0.606*** (0.110) |
| OVEC | 0.266*** (0.035) | | 0.303*** (0.028) | 0.022 (0.036) |
| EM | -0.054 (0.176) | | | 0.062*** (0.022) |
| NONE* MANA | | -1.190** (0.567) | | |
| NONE* MANA* OVEC | | | -0.125*** (0.031) | |
| NONE* MANA* OVEC* EM | | | | -0.429* (0.259) |
| SIZE | 0.003 (0.005) | 0.007 (0.013) | 0.002 (0.005) | -0.003* (0.001) |
| LEV | 0.054 (0.057) | 0.115 (0.113) | 0.061 (0.061) | -0.026 (0.040) |
| LOSS | -0.043*** (0.0121) | -0.020 (0.051) | -0.044*** (0.011) | 0.084*** (0.005) |
| GROWTH | 0.489*** (0.034) | 0.287*** (0.047) | 0.499*** (0.031) | 0.078* (0.047) |
| YS | -0.109 (0.074) | -0.243** (0.118) | -0.104 (0.076) | -0.044* (0.022) |
| KS | 0.013 (0.012) | -0.022 (0.044) | 0.012 (0.011) | -0.067*** (0.011) |
| MB | 0.004* (0.002) | 0.018* (0.010) | 0.005* (0.002) | 0.006*** (0.000) |
| CONS | 0.018 (0.026) | -0.148 (0.160) | 0.012 (0.028) | -0.316*** (0.036) |
| Limer Test (F) | 4.418*** | 2.918*** | 2.683*** | 3.756*** |
| Hausman test | 257.586*** | 105.732*** | 136.214*** | 122.030*** |
| Adjusted R-squared | 0.263 | 0.397 | 0.266 | 0.496 |
| F-statistics | 2.306*** | 2.193*** | 2.364*** | 7.378 |
| Durbin Watson | 2.182 | 2.266 | 2.287 | 2.039 |

All variables are as defined in the table 1. * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

The overconfident manager estimates future sales to be higher. When the sign is more optimistic. As a result, we'll see more stickiness on the condition of a previous increase and also we will be less stickiness on the condition of a previous lower sales. Also, Non-executive managers can influence the quality of management decisions and provide appropriate solutions to improve the performance of the firms. The effectiveness of management decision-making and management separation comes from the fact that non-executive managers often have executive or decision-making posts in other firms, and they have a high motivation to gain the reputation as a

decision-maker and to have better job opportunities in the future. The contradiction between managers' motivation to use the owners' wealth for personal gain and that of non-executive managers to gain the reputation leads to improved corporate governance oversight and ultimately to reduced agency costs. As regards, overconfidence can lead to wasting resources on high-risk and low-profit projects, to avoid this and because managers are worried about the likelihood of future losses, they prevent this process by making earnings smoothing and earnings management.

Limitations and suggestions

This study suffers some limitations. First, the study examines only four managers' characteristics, although several other variables still need investigation. Second, the study examines the potential impact of managers' characteristics on SG&A, although there are several other costs, such as total cost which still need investigation. Third, the study samples are deemed small compared with those examined in the developed countries. Ultimately, through future studies can scrutiny the relationship between the behavior of asymmetric cost and corporate governance mechanisms such as audit committee characteristics, type of auditor, and various variables of ownership structures. Also, requires further research to examine the relationship between managerial incentives and cost stickiness. However, there are few studies on this relationship.

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