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Impacts Of Sales Expense and Administrative Cost Stickiness on Earnings Management – Empirical Evidence from Vietnam

1. Introduction

Earnings Management is one of the most effective information channels when users want to access the quality of financial statement information. Earnings management occurs because managers participate in activities that generate costs and revenues in order to adjust profits to achieve the goals and business strategies of an enterprise and other business activities and shareholders. In addition to the goal of maximizing business value in a competitive market, managers also consider the intervention in profits to save costs in order to create virtual profits in line with the wishes of the business. On the other hand, the accountants always have flexibility and acumen, which greatly helps managers to make efforts to adjust and participate in Earnings Management activities, thereby deeply intervening in all kinds of expenses, especially the income tax expense of the business without violating any regulations as well as the law, in order to create surplus for the business as well as wealth for shareholders. Reducing tax payable and increasing profit after tax - this is considered one of the purposes of Earnings Management.

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Currently, there have been lots of studies on earnings management. Many researchers have conducted research to build earnings management measurement models. Many models have been applied into many research on earnings management and earnings quality. Typically, there is an accrual based on model of earnings management (Jones, 1991; Dechow et al., 1995). Furthermore, there is a real earnings management model (Gunny, 2010; Roychowdhury, 2006). In the world, there are studies on earnings management such as Quinghua et al. (2007), Dechow et al. (2010), Radzi et al (2011). In Vietnam, there have also been several studies on factors affecting earnings management such as Hong, N.T.P & Thuong, N.T (2015), Nguyen Thi Phuong Hong (2016).

Sales cost and administrative cost stickiness of each enterprise is different, leading to the increase or decrease in costs in production and business activities. Globally, there have been many studies related to this issue. However, within the scope of understanding and synthesizing studies in Vietnam concerning about earnings management as well as the factors affecting earnings management, we have found that there has not been any in-depth research on the impact of sales cost and administrative cost stickiness on Earnings management in Vietnam.

2. Literature review

2.1. Theoretical frameworks

2.1.1 Agency theory

Jensen & Meckling (1976) presented agency theory which studied the relationship between the principals and agent, in which the agent will perform a number of tasks on behalf of the principal through the contract. The theory explains that there is a separation between the ownership and management, leading to the problem that managers can act more in their own interests than in owners'.

When the earnings management at the company is intentionally adjusted, it is easy to lead to wrong decisions from investors in the market, so investors should carefully consider and evaluate the companies before making any decisions.

Smith et al. (1979) argue that the more a firm borrows, the higher its financial leverage is, which contributes to an increase in return on equity, while making the company's capital structure riskier. This will lead to a decrease in the creditor's ability to recover loans. In assessing the risks when

lending, creditors also rely on the level of earnings management to make decisions.

In addition, the auditor will check for errors when the company has earnings management, thereby minimizing the risks and unnecessary conflicts between business leaders and outside shareholders.

When applying the agency theory to our research, from the above analysis, we expect that the company with the higher the sales cost stickiness is, the higher the earnings management becomes, leaders will tend to invest more in advertising expenses or intervene more in increasing and decreasing in sales costs. This leads to more earnings management levels. The higher administrative cost stickiness is, the lower the earnings management becomes because the managers do not want to invest too much in this cost to increase company's profits. The company audited by the Big Four has lower earnings management than ones not audited by the Big Four.

2.1.2. Signaling theory

Arrow (1972) & Schipper (1981) developed Signaling theory which explains the information asymmetry between the information disclosed by company and the information received by the investors. That means companies must disclose the necessary information to the users voluntarily and will give signals to investors and others to make different decisions. This theory also contributes to explaining that companies with low levels of earnings management will choose accounting methods and policies that show the high effectiveness of business activities, while companies have high level of earnings management deliberately cover up that defect of the business.

When we applied signaling theory to our research, we expected that companies audited by Big 4 audit firms have lower earnings management than non-Big 4 audit firms. The larger the company is, the more capital it will attract, which leads to the company's more earnings management behaviors. On the other hand, when the company has a larger size and a longer listing time on exchanges, earnings management is higher to have investors attention easily. When a company has high financial leverage, which means a lot of debt, it tends to give a good signal to the lenders by reporting earnings that are higher than they actually are. This leads to high earnings management behavior. Furthermore, if the company has a higher operating cash flow, this shows that the company has a good business signal, leading to the company's tendency to reduce earnings management behavior.

2.1.3. Political cost theory

Political cost theory assumes that if firms are larger size and more developed and have greater business visibility, it is more likely for them to become "victims" of problems related to legal and asset transfers (Watts and Zimmerman, 1986). To reduce these political costs, large companies choose accounting methods that reduce regular income (Zimmerman, 1983). Firms reducing the possibility or size of transfers (Cahan, 1992) is also an option to reduce the aforementioned political costs. Nguyen Thi Phuong Hong (2016) stated that "Political costs are one of the most important costs and payments of a company and are considered non-contractual costs"; therefore, the company always wants to reduce this cost. This theory also concludes that companies supervised by government or state agencies tend to have more information disclosures to avoid regulatory interference (Watts & Zimmerman, 1986).

2.2. Literature review

White, Sondhi and Fried (1997) refer to an integrated procedure in earnings management analysis that involves comparing the items of sales and administrative costs by the percentage of net sales between companies in an industry or over time for a particular company. Then, Calleja, K., Steliaros, M., & Thomas, D. C. (2006) conducted studies in UK, US, Germany and France to show that operating costs are hard to respond to changes in revenue and taking average, there is 0.97% increase in operating cost for 1% sale increase discovered (see below table 1).

Next, we summarize related studies in below table 1:

Table 1. Summary of previous studies

Authors	Year	Contents, results
Calleja, K., Steliaros, M., & Thomas, D. C.	2006	Performed researches in UK, US, Germany and France to show that operating costs are hard to respond to changes in revenue
Balakrishnan and Soderstrom	2011	Capacity of managers will affect cost guidance decision making on cost management (short term decision)
Yasu and Kajiwara	2011	Presented results showing that current cost stickiness and future sales are related.
Dang Ngoc Hung	2015	There is big influence of corporate income tax reduction on firm earning management motivation.
Hong, N.T. P	2016	With Jones modified model, show the lower the level of earnings management, the lower the profitability

Habib, A., & Hasan, M. M.	2016	asymmetrical cost behavior showed via Cost stickiness
Cook et al.	2017	There is negative impact between firm revenue and administrative costs
La Xuan Dao et al.	2017	Firm size affect level of earnings management (positively)
Salehi	2018	between administrative costs, sales, materials, labor and manufacturing overhead and earnings management there is relationship that is significant.
Ngo Hoang Diep	2018	Some factors such as ROA, women ratio on Board have strongest effect (earning management)
Ana Belen Tulcanaza Prieto	2019	There is the existence of operating stickiness, such as stickiness in inventory, property, plant, equipment costs (PPE) and labor costs
Abdulwahid Ahmed Hashed Abdullah	2020	between the cost of goods sold and the quality of financial disclosures there is relationship (negative)

Source: own study

2.3. Hypothesis development

Based on the theoretical framework and literature reviews, we propose a research model as follows:

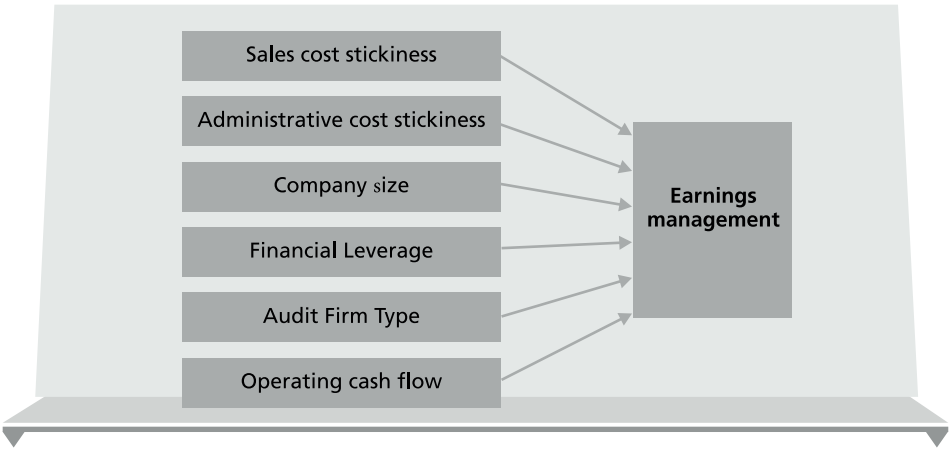

Figure 1. Research mode

Source: own study

Our research model includes seven variables. First, earnings management is dependent variable. Second, two variables include sales cost stickiness (SCA) and administrative cost stickiness (ACA) are independent variables. Last, the remaining four variables including financial leverage (LEV), company size (SIZE), audit firm type (AUDIT) and operating cash flow (CFO) are control variables.

The proposed research hypotheses are as follows (table 2).

Table 2. Research hypotheses

Hypothesis	Hypothetical content	Theoretical framework	Expected
H1	The higher the sales cost stickiness is, the higher the EM level is.	Agency theory	+
H2	The higher the administrative cost stickiness is, the lower the EM level is.	Agency theory	-
H3	If financial leverage greater, the EM level higher.	Agency theory Signaling theory	+
H4	The larger the company is, the higher the EM level is.	Political cost theory Signaling theory	+
H5	The company is audited by Big 4 au- diting firm has lower EM level than those not audited by Big 4 is.	Agency theory Signaling theory	-
H6	If the operating cash flow higher, EM level is lower.	Signaling theory	-

(Note: (+): The same effect; (-): The opposite effect)

Source: own study

3. Methodology

3.1. Regression model

We conduct a multivariate linear regression analysis to examine the relationship between sales cost and administrative cost stickiness and earnings management, as well as other factors affecting earnings management. Specifically, the following regression model is estimated:

$$EM_{it} = a_0 + a_1{*}SCA_{it} + a_2{*}ACA_{it} + a_3{*}LEV_{it} + a_4{*}SIZE_{it} + a_5{*}AUDIT_{it} + a_6{*}CFO_{it} + £_{it}$$

In which:

EM: earnings management level, SCA: sales cost stickiness, ACA: administrative cost stickiness, LEV as financial leverage, SIZE: the company size, AUDIT: audit firm type, CFO: operating cash flow and £it: residual.

3.2. Variable measurements

To measure earnings management, we use discretionary accruals based on the modified Jones model of Dechow et al. (1995).

Total accruals (TA) include discretionary accruals (DA) and nondiscretionary accruals (NDA) (Jones 1991). Thus, the higher the discretionary is, the higher earnings management the company engages.

Model of Dechow et al. (1995) with variables divided by lagged total assets as follows:

$$\frac{TA_{it}}{A_{t-1}} = \frac{\alpha_1}{A_{t-1}} + \alpha_2 \frac{(\Delta REV_{it} - \Delta REC_{it})}{A_{t-1}} + \alpha_3 \frac{PPE_{it}}{A_{t-1}} + \varepsilon_{it}$$

Then, NDA is determined by the equation:

$$\frac{NDA_{it}}{A_{t-1}} = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{(\Delta REV_{it} - \Delta REC_{it})}{A_{t-1}} + \alpha_3 \frac{PPE_{it}}{A_{t-1}}$$

The estimation of α_1, α_2 and α_3 are determined by the result of OLS regression of TA measurement from Jones (1991) model as follows:

$$\frac{TA_{it}}{A_{t-1}} = \frac{\alpha_1}{A_{t-1}} + \alpha_2 \frac{\Delta REV_{it}}{A_{t-1}} + \alpha_3 \frac{PPE_{it}}{A_{t-1}} + \varepsilon_{it}$$

Accordingly, TA is determined by the difference between net operating income (NI) and operating cash flow (CFO) (Hribar and Collins 2002); ΔREV_{it}: the

revenue in year t is less than the revenues in year t-1 for firm i; ΔREC_{it} : the net receivable in year t is less than the net receivable in year t-1 for firm i; PPE_{it} : the gross PPE for firm i in year t; A_{t-1} : logarithm of lagged total assets.

The discretionary accruals in our research model account for the absolute value $\left|DA_{it} / A_{t-1}\right|$, according to Lai (2011) because earnings management behavior is profit-adjusted activities, regardless of its increase or decrease (equivalent to discretionary accruals as a positive or negative value) (Nguyen Thi Phuong Hong 2016). Therefore, in our study, we use the absolute value of discretionary accruals as a proxy for earnings management.

Controlling other changes, authors add control variables in our regression model: financial leverage (LEV), company size (SIZE), audit Firm type (AUDIT) and operating cash flow (CFO).

Table 3. Measuring variables

Variable name	Symbol	Measurement	Source
Independent variable			
Sales cost stickiness	SCA	difference in sales costs in years t and t-1 divided by sales ofthe previous year	Anderson, Banker and Janakiraman (2003), Salehi et al (2018), Chen, Lu and Sougiannis (2012)
Administrative cost stickiness	ACA	difference in administrative expenses in years t and t-1 divided by sales of the last year	Anderson (2003), Salehi et al (2018); Chen, Lu and Sougiannis (2012)
Control variables			
Financial leverage	LEV	Equal total debt to to- tal assets as at the bal- ance sheet date	Alves (2014), Hassan (2013), Klai (2011), Abed et al (2012), Houqe et al. (2010), Banker et al (2017), Wilson (2009), Chen et al (2010), Kim et al (2011), Richardson and Lanis (2007), Richardson et al (2013), McGuire et al (2012), Richardson et al (2016), Hoang Tuan Nam (2017), Nguyen Diem Thi (2018)

Company size	SIZE	Logarithm of total assets of company at financial year end	Klai (2011), Abed et al (2012), Houqe et al (2010), Banker et al (2017), Ana Belen Tulcanaza Prieto (2019); Derashid and Zhang (2003), Wilson (2009), Chen et al (2010), Richardson et al (2013), Taylor and Richardson (2013), Gaaya et al (2017), Phan Gia Quyen (2017), Hoang Tuan Nam (2017), Nguyen Huynh Kim Phuong (2018), Nguyen Diem Thi (2018)
Audit firm Type	AUDIT	Equals 1 if the firm is audited by Big4, and zero if the firm is not audited by Big4	Qinghua et al (2007), Klai (2011), Alves (2014), Houqe et al (2010), McGuire et al (2012), Richardson et al (2013), Gaaya et al (2017), Houcine & Kolsi (2017)
Operating cash flow	CFO	Net cash flow from business operations	Francis et al (2004); Roychowdhury (2006); Larcker and Richardson (2004); Dechow & Dichev (2002); Hribar and Collins (2002)

Source: own study

3.3. Select Sample and data

3.3.1. Select Sample

At the end of 2018, the total number of companies listed on both exchanges was 748, of which the Hanoi Stock Ex. (HNX) had 366 companies and the Ho Chi Minh Stock Ex. (HOSE) had 382 companies. However, the sample excludes all banks, insurance and securities companies due to their unique structures of financial statements. Therefore, there are 649 remaining companies that satisfy the conditions of the study. We collected data from audited financial statements (F.S) for 3 years 2016, 2017 and 2018.

We collected data for two sample sets. The first sample set is used to measure earnings management (dependent variable), the second one is used to test the hypotheses.

For the first sample data collection, we selected a non-random sample from 649 companies listed on Ho Chi Minh stock exchanges and Hanoi stock exchanges. As a result, there were 609 companies (320 companies on HNX and 289 companies on HOSE), resulting in the collected sample used to measure earnings management accounted for 1827 observations.

For the second sample set, we also selected the non-random sampling based on 1827 observations of the first collected sample. The company had sufficient information for 3 years and information suitable for the study to measure independent variables and control variables in the model. There were 83 matching companies for each of 2016, 2017 and 2018 resulting in the collected sample used to test the hypotheses accounted for 249 observations.

Criteria for selecting observational samples for the study are as follows:

- companies operating and listed on HNX and HOSE in the period 2016-2018,
- companies having a fiscal year that begins on January 1 and ends on December 31,
- companies not in the financial, banking and insurance sectors,
- companies with data available so that it can be collected easily.

3.3.2. Data collection

We collected data from the website https://cafef.vn/.

To measure the independent variables, we took the data of sales and administrative cost on the income statements. For dependent variable, we collected relevant data for measurement taken on balance sheets, income statements and cash flow statements.

For control variables, we also collected data from audited F.S listed on Vietnam stock market.

4. Empirical

4.1. Descriptive statistics

The earnings management behavior of companies is the intervention, adjustment to increase or decrease the actual profit value, which falsifies the reported profit on the financial statements. However, whether earnings management receives an increased value (positive earnings management) or a decreased value (negative earnings management), the earnings management level at the enterprise also exists. Therefore, in order to analyze the earnings management between the years within the scope of the study, we calculated the absolute value of the earnings management level, the higher the absolute earnings management level is, the higher the earnings management level is; thus, this leads to the greater the earnings management in each enterprise.

We see in table 4, the mean of earnings management in the period 2016-2018 is 0.1079389 (10.8%).

Table 4. Status of earnings management

Year	Obs	Min	Max	Mean	Std.Dev
2016	609	0.0006586	1.167426	0.1119507	0.1312345
2017	609	0.0004952	1.474533	0.1090597	0.1260947
2018	609	0.0004461	0.942008	0.1028063	0.1135061
3year	1.827	0.0004461	1.474533	0.1079389	0.1238269

Source: own study

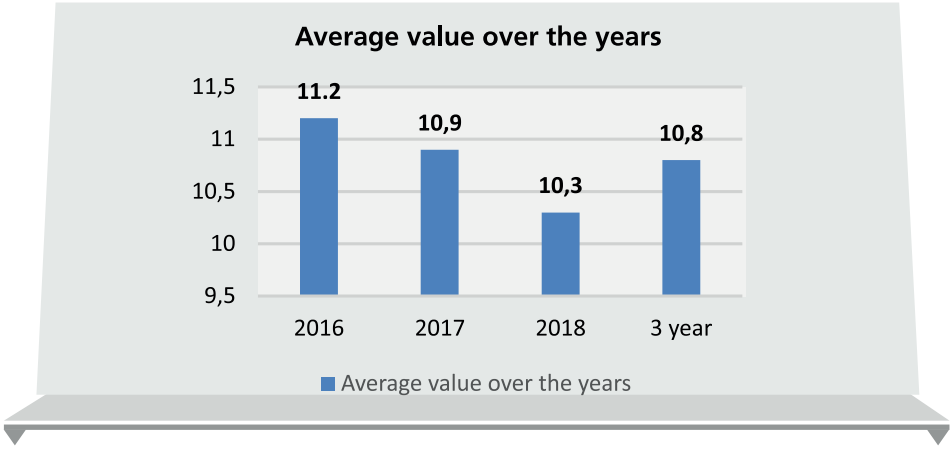

Figure 2. Average value over the years

Source: own study

Looking at the statistical results between the years shown in chart 1, it can be seen that the level of earnings management gradually decreased from 2016 to 2018 with mean of 11.2% in 2016, 10.9% in 2017 and 10.3% in 2018, the average for all 3 years is 10.8%. This shows that the earnings management of managers is

tending to decrease every year, depending on different conditions and external influences in order to effectively implement earnings management behavior.

Table 5. Descriptive statistics of DA, SCA, ACA, LEV, SIZE và CFO

Variable	Obs	Mean	Std.Dev	Min	Max
DA	249	.0958218	.1049694	.00581	.942008
SCA	249	.0023207	.0390413	-.1532906	.4645843
ACA	249	.0018604	.0272528	-.1055825	.1776826
LEV	249	.5067484	.1931371	.0270499	.9062022
SIZE	249	14.37483	1.449807	11.03795	17.38415
CFO	249	138850.6	443556.4	-2173432	2320177

Source: own study

The descriptive statistical results of the variables DA, SCA, ACA, LEV, SIZE and CFO are shown in table 5, showing that absolute earnings management stage 2016 - 2018 is 9.58%. Earnings management level also has a significant difference between the min 0.006% and the max 94%.

Sales cost stickiness (SCA): the mean is 0.23 %, the lowest cost sickiness is - 15.3% and the highest cost stickiness is 46.5%. Thus, there is a significant difference between the maximum and minimum values, indicating that of cost stickiness is significantly different for each company because of its numerously different industry sectors.

Administrative cost stickiness (ACA): the mean is 0.19%, the lowest cost sickiness is -10.6% and the highest Cost Sickiness is 17.8%. Thus, there is a significant difference between the maximum and minimum values, indicating that cost stickiness is significantly different for each company because of its numerously different industry sectors.

Financial leverage (LEV): the lowest debt ratio is 2.7% and the highest debt ratio is 90.6%. It shows a significant difference in the use of debt as business leverage and the company's risk tolerance.

Company size (SIZE): the mean of 14.37%, a minimum value of 11.04% and a maximum value of 17.38%. It means the size of companies is significantly

different, which is also understandable by companies in different industries and fields.

Operating cash flow (CFO): This indicator is collected on the statement of cash flows with the smallest value of -2,173,432 (VND million), the maximum value of 2,320,177 (VND million) and the mean is 138,851 (million VND).

Audit firm type (AUDIT): Descriptive statistics in the form of frequency and presented in table 6, the number of samples audited by the Big 4 audit firms is 98 observations, accounting for 39.36 %; The remaining 151 observations were audited by non-Big 4 companies, accounting for 60.64%.

Table 6. AUDIT variable statistics

AUDIT	Quantity	Percent (%)
Non-Big 4	151	60.64
Big 4	98	39.36
Total	**249**	**100**

Source: own study

4.2. Regression results

As the sample is of balanced panel data, we estimate the regression model (1) using three methods: Pooled OLS, Fixed effect model (FEM) and Random effect model (REM) to choose the most appropriate model. The results of Pooled OLS, FEM and REM models are shown in table 6, 7 and 8. According to the results of the Pooled OLS model shown in table 6, the adjusted R squared (Adj R-squared) is equal to 10.88%, and the Prob> F = 0.0000 (statistically significant at 1% level). This suggests that the Pooled OLS method may be an appropriate model. According to the results of the F - statistic test in table 7, the statistical value F (82.160) = 1.39 and Prob> F = 0.0405 is less than 0.05 (statistically significant at 5%), so we reject the null hypothesis. Therefore, FEM is more appropriate than Pooled OLS. The reason is explained by the existence of fixed effects in each company over time. Based on table 9 – Breusch - Pagan Lagrangian Multiplier test results, the value of Chibar2 (01) = 0.45 and Prob> Chibar2 = 0.2523 is large than 0.05 (no statistically significant at 1%, 5%and 10%), so it can accept the null hypothesis. Consequently, this

result shows that the Pooled OLS model is more appropriate than the REM model.

Next, we compared FEM and REM models, then selected the most appropriate one. We chose Hausman test with the null hypothesis Cov (Xit, ui) = 0. Hypothesis H0 is understood to be no correlation between explanatory variables and random components (REM is an appropriate model). Hypothesis H1: there is a correlation between explanatory variables and random components (FEM is an appropriate model). The result of the Hausman test shown in table 10 shows that Prob> chi2 = 0.0014 is less than 0.05 (statistically significant at 5%), that is to reject the null hypothesis, so FEM is more appropriate than REM.

Table 7. Regression result using Pooled OLS method

Source	SS	df	MS
Model	.356277168	6	.059379528
Residual	2.37618962	242	.009818965
Total	2.73246679	248	.011018011

Number of obs =	249
F(6, 242) =	6.05
Prob > F =	0.0000
R-squared =	0.1304
Adj R-squared =	0.1088
Root MSE =	.09909

DA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
SCA	.1127674	.1757679	0.64	0.522	-.2334629	.4589976
ACA	-.1110022	.2555477	-0.43	0.664	-.6143841	.3923796
LEV	.0220605	.0349357	0.63	0.528	-.0467565	.0908775
SIZE	-.002775	.0052546	-0.53	0.598	-.0131256	.0075756
AUDIT	-.0139165	.0151614	-0.92	0.360	-.0437816	.0159487
CFO	.0005042	.000088	5.73	0.000	.0003309	.0006775
_cons	.0808387	.0656919	1.23	0.220	-.0485622	.2102396

Source: own study

Table 8. Regression result using FEM with crosssectional and period of fixed effects and result of F-statistic test

```
Fixed-effects (within) regression               Number of obs      =       249
Group variable: FIRM                            Number of groups   =        83

R-sq:  within  = 0.1191                         Obs per group: min =         3
       between = 0.0194                                        avg =       3.0
       overall = 0.0294                                        max =         3

                                                F(6,160)           =      3.61
corr(u_i, Xb)  = -0.6780                        Prob > F           =    0.0022
```

DA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
SCA	.2207548	.2011276	1.10	0.274	-.1764525	.6179621
ACA	.1885823	.281586	0.67	0.504	-.3675224	.744687
LEV	.4208808	.1467662	2.87	0.005	.131032	.7107296
SIZE	-.0158084	.0372898	-0.42	0.672	-.0894522	.0578353
AUDIT	-.0296215	.037789	-0.78	0.434	-.1042511	.0450081
CFO	.0003073	.0001164	2.64	0.009	.0000774	.0005372
_cons	.1117502	.483296	0.23	0.817	-.8427119	1.066212
sigma_u	.09747798					
sigma_e	.09317658					
rho	.52254976	(fraction of variance due to u_i)				

```
F test that all u_i=0:     F(82, 160) =     1.39             Prob > F = 0.0405
```

Source: own study

Table 9. Regression result using REM with crosssectional random effects

```
Random-effects GLS regression                   Number of obs      =       249
Group variable: FIRM                            Number of groups   =        83

R-sq:  within  = 0.0523                         Obs per group: min =         3
       between = 0.2597                                        avg =       3.0
       overall = 0.1301                                        max =         3

                                                Wald chi2(6)       =     33.24
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

DA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
SCA	.1299232	.1744198	0.74	0.456	-.2119334	.4717797
ACA	-.0895372	.2528168	-0.35	0.723	-.585049	.4059746
LEV	.0281918	.0369274	0.76	0.445	-.0441845	.1005682
SIZE	-.0026771	.005571	-0.48	0.631	-.0135961	.0082418
AUDIT	-.0145737	.0158545	-0.92	0.358	-.045648	.0165006
CFO	.0004848	.0000888	5.46	0.000	.0003109	.0006588
_cons	.0795842	.0696024	1.14	0.253	-.0568341	.2160025
sigma_u	.0246629					
sigma_e	.09317658					
rho	.06547361	(fraction of variance due to u_i)				

Source: own study

Table 10. Result of Breusch – Pagan Lagrangian Multiplier test

```
Breusch and Pagan Lagrangian multiplier test for random effects

        DA[FIRM,t] = Xb + u[FIRM] + e[FIRM,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                      DA |   .011018       .1049667
                       e |  .0086819       .0931766
                       u |  .0006083       .0246629

        Test:   Var(u) = 0
                             chibar2(01) =      0.45
                          Prob > chibar2 =    0.2523
```

Source: own study

Table 11. Result of Hausman test

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
SCA	.2207548	.1299232	.0908316	.1001502
ACA	.1885823	-.0895372	.2781196	.1239934
LEV	.4208808	.0281918	.3926889	.1420447
SIZE	-.0158084	-.0026771	-.0131313	.0368713
AUDIT	-.0296215	-.0145737	-.0150478	.0343022
CFO	.0003073	.0004848	-.0001775	.0000753

```
                b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test:  Ho:  difference in coefficients not systematic

              chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =       21.59
            Prob>chi2 =      0.0014
```

Source: own study

In summary, after conducting the F-statistic test, LM test and Hausman test, we concluded that the FEM was the most appropriate model.

Table 12. Suitable tests for the regression model

Test	Pooled OLS and FEM	Pooled OLS and REM	FEM and REM
F – test		F(82,160) = 1.39 and Prob>F=0.0405	
Breusch – Pagan test	Chibar2(01) = 0.45' and Prob>chibar2=0.2523		
Hausman test			Chi2(6) = 21.59 and Prob>Chi2=0.0014
Conclusion	**Choose Pooled OLS**	**Choose FEM**	**Choose FEM**

Source: own study

Table 13. Regression analysis FGLS

```
Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        heteroskedastic
Correlation:   common AR(1) coefficient for all panels  (0.1054)

Estimated covariances      =        83          Number of obs      =       249
Estimated autocorrelations =         1          Number of groups   =        83
Estimated coefficients     =         7          Time periods       =         3
                                                Wald chi2(6)       =    433.41
                                                Prob > chi2        =    0.0000
```

DA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
SCA	.2430969	.0644926	3.77	0.000	.1166938	.3695001
ACA	-.2145999	.1014431	-2.12	0.034	-.4134247	-.015775
LEV	.0070838	.0124157	0.57	0.568	-.0172505	.031418
SIZE	-.0031799	.0026614	-1.19	0.232	-.0083962	.0020364
AUDIT	.0020239	.0053962	0.38	0.708	-.0085525	.0126003
CFO	.0004243	.0000261	16.27	0.000	.0003732	.0004754
_cons	.0684301	.0380362	1.80	0.072	-.0061194	.1429797

Source: own study

After running the FGLS regression model, the results show that three of the six variables affect the earnings management level. The SCA variable and CFO

variable with statistical significance are 1% and the ACA variable with statistical significance is 5%. In addition, among the 3 variables affecting the earnings management level, there are 2 variables having a positive impact, namely the sales cost stickiness (SCA) operating cash flow (CFO), but the ACA variable has a negative impact on the earnings management level. The audit firm type (AUDIT), company size (SIZE) and financial leverage (LEV) variables have no impact on the earnings management level.

4.3. Research hypothesis test results

From the above analysis, we summarize the research results and compares them with the proposed hypothesis presented as follows (table 14).

Table 14. Summary of the results of hypothesis testing

Hypothesis	Hypothetical content	Theoretical framework	Expected	Results
H1	The higher the sales cost stickiness is, the higher the EM level is.	Agency theory	+	+
H2	The higher the administrative cost stickiness is, the lower the EM level is.	Agency theory	-	-
H3	If financial leverage greater, EM level higher.	Agency theory Signaling theory	+	0
H4	the company larger, EM level is higher.	Political cost theory Signaling theory	+	0
H5	The company is audited by Big 4 auditing firm has lower EM level than those not audited by Big 4 is.	Agency theory Signaling theory	-	0
H6	If operating cash flow higher, EM level is lower.	Signaling theory	-	+

Symbol: (+): The same effect; (-): The opposite effect; (0): no impact

Source: own study

The regression results of the model obtaining the beta coefficient of the SCA is 0.2430969 and the P-value = 0.000 < 0.05 (statistically significant at level of 5%). This shows that the sales cost stickiness has a positive impact on the earnings management level of companies listed on the stock market in Vietnam. The higher the sales cost stickiness is, the higher the earnings management level is. As we expected, the higher the sales cost stickiness is, the higher the of earnings management level is. This result is also consistent with the study results of Salehi (2018).

The regression results of the model obtaining the beta coefficient of the SCA is -0.2145999 and the P-value = 0.034 < 0.05 with a level of 5%. This shows that the administrative cost stickiness has a negative impact on the earnings management level companies listed on the stock market in Vietnam. The higher

the administrative cost stickiness is, the lower the earnings management level is. Experimental results in the actual context of companies listed on the stock market of Vietnam show the same results as our expectation that when the company has a higher administrative cost stickiness, the the lower the earnings management level is, this result is consistent with the study results of Salehi (2018).

Test results with control variables: We have used 4 control variables to include in the research model, the research results show that there is one variable that affects the earnings management level, namely operating cash flow (CFO) and the remaining 3 variables are company size (SIZE), financial leverage (LEV) and audit firm type (AUDIT) which are not statistically significant at 1%, 5% or 10%, specifically:

Financial leverage: The regression results of the model obtained beta coefficient of the variable LEV is 0.0070838 and the P-value = 0.568 > 0.05 shows that financial leverage is not has an impact on the level of Operating Cash Flow of companies listed on the stock market in Vietnam. Thus, hypothesis H3 is rejected.

Company size: The regression results obtained the beta coefficient of the SIZE variable (company size) is -0.0031799 and the P-value = 0.232 > 0.05 shows that the company's size does not impact on the level of Earnings management of companies listed on the stock market in Vietnam. Therefore, hypothesis H4 is rejected.

Audit firm type: The regression results obtained the beta coefficient of the AUDIT variable of 0.0020239 and the P-value = 0.708 > 0.05, showing that the audit firm type is not has an impact on the level of earnings management for companies listed on the stock market in Vietnam. Thus, hypothesis H5 is rejected. This result shows that the type of audit firm is not significant for the

level of Earnings management, that is, no difference between the audit firms of Big4 and outside of Big4 in providing audit services. will be of higher or lower quality with respect to the level of Earnings management.

Operating cash flow: Findings give us beta coefficient of the CFO variable (operating cash flow) is 0.0004243 and the P-value = 0.000 < 0.05 shows that the operating cash flow has the same effect. with the level of profit management at companies listed on the stock market in Vietnam. Therefore, hypothesis H6 is rejected.

5. Conclusion

The above test results indicate that the main factors, sales cost stickiness and administrative cost stickiness, included in the model, have an impact on earnings management level. Sales cost stickiness has a positive impact, while administrative cost stickiness has a negative impact on earnings management level. And operating cash flow has effect on earnings management level, while company size, financial leverage and audit firm type have no impact on earnings management level.

In conclusion, our test results suggest these following solutions:

Firstly, companies should develop clear policies and detailed procedures for increasing and decreasing sales and administrative costs to suit the company's development goals and directions. The company should also have appropriate balances when increasing or decreasing revenues and effective costs for each different case in order to achieve the management's purpose and create a good reputation for the company in the stock market.

Secondly, managers need to consider the appropriateness of the sales and administrative costs. Besides, managers also reconsider expenses which are either lower or higher than the normal realized value.

Thirdly, the auditor needs to check the nature of the costs, the relevant records, procedures and approval authority at the unit, and the price policy. The auditor should obtain sufficient audit evidence on which to base the audit opinion.

Overall, the results of the study contribute to helping investors, creditors or others have a more comprehensive view of profits and business results of companies so that they will be able to make rational decisions.

More management practical implications

In overall, in terms of financial management, there are practical implications such as financial managers need to pay attention to managing operating cash

flow (include cost and revenue factors) more than firm size and leverage factors.

Then, in term of accounting management, there are practical implications, for instance, management need to manage better admin cost, more effectively, as well as increase sale cost properly to enhance earnings and additionally, consider to use cost-income ratios in this estimating model.

Limitation of research

We can expand our research model for other industries and other markets.

Abstract

This study aims to examine effects of sales cost stickiness and administrative cost stickiness on earnings management level.
Next, the authors explore whether financial leverage, company size audit firm type and operating cash flow affect the earnings management level of Vietnamese stock exchanges listed companies. The research sample consists of 249 observations (83 companies excluding companies in the banking, finance and insurance sectors) taken from two Vietnamese stock exchanges, HNX and HOSE. For data analysis we use feasible generalized least square regression method. The research results find that sales expense stickiness and administrative cost stickiness, included in the model, have an impact on earnings management level. Sales cost stickiness has a positive impact, while administrative cost stickiness has an impact (negative) on earnings management level. Besides, operating cash flow has an impact on earnings management level, while company size, financial leverage and audit firm type found out with no effect on earnings management level. The results of the study contribute to helping investors, creditors or others have a more comprehensive view of profits and business results of companies so that they will be able to make rational decisions.

Keywords: *Cost Stickiness, Earnings Management, Administrative Cost Stickiness, Sales Cost Stickiness.*

JEL: M4, M41, G32

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