Do the Cost Stickiness in The Selling, General and Administrative Costs Occur in Manufacturing Companies in Indonesia?

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Abstract: The purpose of this research is to determine whether the cost stickiness occurred in manufacturing companies in Indonesia. Cost stickiness of the cost increase can be seen from the higher cost of a rise in the volume of activity when compared with the cost decline as volume decreased activity. This study uses two models with the logarithm of the change of variable selling, general and administrative costs (SG&A) costs as the dependent variable during the logarithmic change in operating income, a dummy variable intensity increase of income and assets as an independent variable. Research samples using 135 manufacturing companies in the period 2009-2011. This study could not find any cost stickiness in manufacturing companies in Indonesia. However, we found that the higher the intensity of the assets of the company, the higher cost stickiness.

Keywords: Cost Stickiness, Operating Costs, Net Sales, Asset Intensity.


Kata Kunci: Kelengketan Biaya, Biaya Operasional, Penjualan Bersih, Intensitas Aset.

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1. Introduction

In the literature of cost accounting, cost behavior can be classified into two, namely fixed costs and variable costs. Fixed costs are defined as the cost which does not entirely change when business activity increased or decreased, while the variable cost is the cost which the total proportionally increases towards the increase in activities and proportionally decreases towards the decrease in activities (Carter, 2009: 69). Variable costs proportionally change by changing in driving activities, the magnitude of the change in cost only depends on the rate of change in activity level, not on the direction of change (Noreen and Soderstrom, 1997).

Several studies have found that the increase of cost is higher when the volume of activity increases compared to the cost decline during volume of activity decreases (Cooper and Kaplan, 1998 in Windyastuti and Biyanto, 2005). This cost behavior is called the cost stickiness (stickiness costs). Cost is called sticky when the rising costs follow the increase of volume in the company's activities, but the decline in the volume in company's activities is not accompanied by a decrease in costs (Balakrishnan and Gruca, 2008).

This inconsistency behavior at the cost is due to intentional acts performed by the manager is facing the uncertainty of future demand. When the sales volume declines, the company must bear the idle cost of resources bound. Managers decide to keep these resources to obtain assurance that the volume has decreased permanently (He et al., 2010). Managers must be careful in determining whether they will maintain the resources bound or release those resources when the company is likely to experience a decrease in the sales volume. When the manager chooses to retain the resources bound, the company must bear the cost of the capacity of the idle resources. However, if the managers release those resources, the company must pay adjustments cost for savings and buy back the resources that have been released when the sales volume increases. If the possibility of a decline in sales volume is smaller or the adjustment cost is higher, the cost stickiness is expected to be stronger (Anderson et al., 2003).

This research study replicates the previous study held by Anderson et al., (2003) which examined the behavior of sticky cost on selling, general and administrative
(SG&A) costs in manufacturing companies in the United States. In this study, the researcher will test different data samples with the previous research. The researcher would do the test in SG&A costs in manufacturing companies in Indonesia. In Balakrishnan research and Gruca, (2008), it was found that the SG&A costs are sticky in response to income (revenue). The cost of the associated units with the company's primary activities will be sticky (sticky) when compared to the cost of the supporting units. Therefore, the main point of this research is that sticky cost behavior in the SG&A costs in manufacturing companies in Indonesia.

The previous research held by Windyastuti and Biyanto (2005) found a cost stickiness (stickiness costs) in the SG&A costs in manufacturing companies in Indonesia, and it also found that cost stickiness increased along with the company's assets intensity (the ratio of total assets towards net sales). However, the research held by Dewi (2012) did not find any increased stickiness cost following the asset intensity. In the study conducted by Rahmadi (2012), it was not found any cost stickiness in the SG&A costs in manufacturing companies, but the study found that the level of cost stickiness increased following the companies' asset intensity. In this research, we want to prove the existence of the cost stickiness in the SG&A costs, also the influence of asset intensity towards the level of cost stickiness in manufacturing companies in Indonesia.

This study aims to determine whether the cost stickiness also occurred in manufacturing companies in Indonesia. In this article the author attempts to answer the research question: Are the SG&A costs in manufacturing companies listed in the Stock Exchange sticky costs? And secondly, does the company's asset intensity affect the rate of cost stickiness? This research can contribute to managers in planning the costs because the costs occurred do not completely change in proportion. Also, this study can be used as a reference for financial analysts, potential investors and financial statement users in assessing the performance of the company due to the company's high expense ratio does not always describe the condition that those companies do not run their business efficiently.
2. Theoretical Framework and Hypothesis Development

1. Cost Stickiness in the SG&A Costs

Traditional models of cost behavior are associated with different levels of activity without considering the effects of the managerial intervention on resource management. Managers make changes in the resources bound because some costs stucked in them are lumpy, i.e., when the demand increases beyond the normal capacity, so the company must increase its resources. The addition of these resources leads to increased costs in large quantities at once. Automatically, the cost lumpiness can cause excess capacity, which causes the existence of idle capacity, but did not result in a sticky cost.

The cost is called sticky if the magnitude of the cost increase associated with the rise in volume is greater than the magnitude of the cost reduction associated with the equivalent decrease of volume (Cooper and Kaplan, 1998 in Anderson et al., 2003). Sticky cost occurs due to the imbalance adjustment of resources that is longer in the process of adjustment that decreases compared to the adjustment process which increases. According to Balakrishnan and Gruca (2008), the sticky costs model recognized that costs incurred in a period depend on some degrees on the costs incurred in the prior periods. Both levels of activity in the current period, the level of costs and activity in the previous period affect the costs incurred in the current period. However, on the contrary, in the fixed model/cost behavior variable confirms that the amount of the costs depends on the volume of activity in the current year. That dependence arises because of sticky cost models consider the strategic behavior. Particularly, sticky costs occur because of the manager's role in adjusting the resources committed.

When the manager believes that the decline in sales volume is likely to persist, managers will decide to release its resources during the sales volume decline. As a result, when the volume of sales increases, companies have to bear the costs of adjustment of the release of these resources and must bear the cost of buying back the resources. Those adjustment costs include severance costs when employees were laid off, as well as the cost of the searching, recruitment and employees’ training (Anderson et al., 2003).

When the manager believes that the decline in sales volume is temporary, the
manager will decide to retain resources when sales volume decreases, so the company must bear the cost of idle resources. This causes the idle resource capacity which resulted in cost stickiness. Manager's decision to maintain idle capacity resources is a form of agency cost. According to Jensen and Meckling (1976), agency cost is incurred when a decision is taken because the manager needs to maximize his personal needs, but it is not profitable for the shareholders.

The researcher will test the cost stickiness in SG&A costs towards sales in the period when their incomes increase and when there is a decline in the revenue. This study uses the SG&A costs because this behavior can be learned by connecting income activities that may affect these costs components (Anderson et al., 2003). Research held by Anderson et al. (2003) found that the SG&A costs are sticky to the revenue increase in the SG&A costs as income rises higher than the decrease in SG&A costs when the revenues decline. The research held by Balakrishnan and Gruca (2008) also found a sticky cost on SG&A costs towards income. Based on these results, the hypothesis of this study is:

**H1:** The amount of the increase in SG&A costs when the rising incomes, is higher than the decrease in SG&A costs when the revenue declines.

2. **The Variation of Cost Stickiness Rate**

When the sales volume declines, the manager will try to reduce the scale of the purchase of the raw material inventories procured by purchasing the outside parties. Managers will be easier to cut or stop the raw material. However, for the input obtained from the company (assets), the release of assets when there is a decline in sales is costly. Companies must pay the cost of purchasing and the specific loss of company investment. When there is a decline in sales, the company which has higher assets will have costs stickiness due to it will face a larger dilemma. Thus, the higher the intensity of the asset cost stickiness in selling costs, the higher cost stickiness in general and administrative as well (Windyastuti and Biyanto, 2005). Windyastuti and Biyanto (2005) found that the level of cost stickiness in the SG&A costs increases following the asset intensity. So the hypothesis for this study is:
H2: The level of cost stickiness in SG&A costs increases following the company’s asset intensity (the ratio of total assets towards the revenue).

3. Research Method

2.1 Samples

The samples of this research by using purposive sampling method. The criteria that must be met is that the companies must be listed on the Indonesian Stock Exchange during 2009-2011 and they published the annual financial statements mainly in 2009-2011. Besides, the SG&A costs do not exceed the net sales revenue. The data used in this study are secondary data, i.e., the financial statements of the manufacturing companies during 2009-2011 which website address http://www.idx.co.id which covers the SG&A costs, the company’s net sales revenue, and net assets. The groupings of companies including manufacturing companies were obtained from the Indonesian Capital Market Directory (ICMD).

2.2 Research Variables

Variables used in this study is the SG&A costs, sales revenue, dummy reduction variable and asset intensity. SG&A costs are the dependent variable. On the other hand, the independent variables in this research are the sales revenue, dummy reduction variable and asset intensity.

SG&A costs are the costs incurred in selling and general administrative activities of the company. SG&A costs are well known for operating expenses or operating costs of the company. Current income is cash flow of the gross economic benefits arising from the company's normal activity during a period when those inflows result in increases in equity that does not come from the contribution of capital investment (IAI, 2007).

A dummy variable is a variable that represents the quantification of qualitative variables. Qualitative variables which were quantified on the dummy variable is whether the sales decline during the period $t_{-1}$–$t$ (in 2009-2010 and 2010-2011) or not. If the sales decline then the dummy variable is equal to 1, but if sales increases then the
dummy variable is 0. Asset intensity is the ratio of total assets towards net sales in the same period. If the asset intensity is higher, the cost stickiness in the SG&A costs will also be higher.

2.3 Model

In the classical assumption test, Anderson et al., (2006) produced a model to measure cost stickiness in the SG&A costs to all manufacturing companies. Models are used to show the response of SG&A costs changes towards the change of net sales occurred. If net sales decrease during the two-year period, from 2009-2010 and 2010-2011, the value of decrease dummy will be 1, and it will be 0 if it increases in those periods.

Model 1:

\[
\log \left( \frac{SG&A_{i,t}}{SG&A_{i,t-1}} \right) = \beta_0 + \beta_1 \log \left( \frac{Revenue_{i,t}}{Revenue_{i,t-1}} \right) + \beta_2 \times Decrease\_Dummy_{i,t} \times \log \left( \frac{Revenue_{i,t}}{Revenue_{i,t-1}} \right) + \epsilon_{i,t}
\]

To measure the differences in the level of cost stickiness in each company, the comparison variable used is asset intensity.

Model 2:

\[
\log \left( \frac{SG&A_{i,t}}{SG&A_{i,t-1}} \right) = \beta_0 + \beta_1 \log \left( \frac{Revenue_{i,t}}{Revenue_{i,t-1}} \right) + \beta_2 \times Decrease\_Dummy_{i,t} \times \log \left( \frac{Revenue_{i,t}}{Revenue_{i,t-1}} \right) + \beta_3 \times Decrease\_Dummy_{i,t} \times \log \left( \frac{Total\_Assets_{i,t}}{Revenue_{i,t}} \right) \times \log \left( \frac{Revenue_{i,t}}{Revenue_{i,t-1}} \right) + \epsilon_{i,t}
\]

4. Result and Discussion

4.1 The Description of Research Object

This study used secondary data from annual financial reports of companies listed on the Indonesian Stock Exchange during the years 2009-2011. Based on the data that has been collected, the data are then selected according to predetermined criteria.
Sampling results can be seen in Table 1.

4.2 Descriptive Statistics

Table 2 shows the descriptive statistics for changes in sales and operating costs from the year 2009-2010 and 2010-2011. The table above can explain the increase and decrease in operating costs and sales of manufacturing companies in Indonesia during the years 2009-2011. The average increase in sales for the year 2009-2010 is Rp1,042,890,218,949, and the average decline in sales is Rp629,821,988,548. According to 135 companies, the number of companies which have increased sales is 103, and the companies which the sales decreased are 32 companies. It shows that in 2009-2010 the company experienced sales growths are 76% and 24% of the companies experienced a decline in sales. Whereas, during 2009-2010, operating costs had an average increase of Rp112,108,087,719 and Rp45,731,917,228 decline. The number of companies that experienced an increase in operating costs is 103, and 32 companies declined. It shows that in the year 2009-2010, the company experienced an increase in operating costs by 76% and decreased by 24% of the total 135 companies. Based on the percentage of firms increased sales with the percentage of firms that experienced an increase in operating costs, it can be shown that the increasing operational costs follow the increase in sales in 2009-2010.

During the years 2010-2011, the average increase in sales of the company were Rp1,261,591,033,177, and the decrease was Rp55,652,923,213. The number of companies increased is 118, and the companies that sales decreased is 17 from a total of 135 companies. It can be shown that the company increased sales in 2010-2011 was 87% and 13% sales decline. As for the operating costs in 2010-2011, an average increase was Rp88,735,609,713 and decreased Rp-27,634,953,327. The number of companies that experienced an increase in operating costs was 102, and 33 companies declined. It shows that the company has increased operating costs by 76% and decreased by 24% of the total 135 companies. Based on the percentage increase in sales to the percentage increase in operating costs show that in 2010-2011, the sales increase was not accompanied by increases in operating costs.
For the average increase in fixed assets of the company in the years 2009-2010 and 2010-2011, respectively are Rp551,604,611,699 and Rp940,884,696,728. During the years 2009-2010, the companies that the total assets have increased were 103, and 32 companies experienced a decrease. The number of companies that experienced an increase in total assets during the years 2010-2011 was 110 companies and 25 companies experienced a decline in the number of fixed assets.

4.3 Hypothesis Testing
Based on the results of the ANOVA in Table 3, the significance value of F is 0.000 < 0.05, which means that the independent variable of sales, together with the dummy reduction variable significantly affects the operating costs. In the test for the first hypothesis (see Table there is a difference in the effects of each independent variables towards the dependent variables. The level of significance for the sales of 0.000 < 0.05, it indicates that the sales give a significant effect on the operating costs. On the other hand, for the significance of the dummy reduction of 0.710> 0.05 suggests that the dummy reduction does not significantly influence the operational costs. Based on these results it can be concluded that in the period 2009-2011, cost stickiness did not occur in manufacturing companies. The results of this study contradict previous research held by Dewi (2012) who found the cost stickiness in manufacturing companies in Indonesia. This is because during the years 2009-2011 most of the companies experienced an increase in sales that cost stickiness did not occur in manufacturing companies. While the research held by Dewi (2012) found that the global financial crisis had impacts towards the economy in Indonesia so that the study found the cost stickiness in manufacturing companies in Indonesia. The companies which experienced increased sales in 2010-2011 were 87% and 13% experienced a decline in sales while operating expenses increased by 76% and decreased by 24%. Based on the percentage of increase in sales to the percentage of increase in operating costs show that in 2010-2011, the sales increase was not accompanied by an increase in SG&A costs. It can be concluded that the cost stickiness in the SG&A costs does not occur in manufacturing companies.

Based on the results of ANOVA in Table 5, the second hypothesis gained
significance F 0.000 < 0.05 indicates that the independent variables have a significant effect on the dependent variable. The results for the second hypothesis (see Table 6) suggests that the regression coefficient $\beta_3$ showed negative and significant figures with the regression coefficient of -0.557. It shows that when asset intensity increases, the decrease in operating costs resulting from the decline in sales will be lower than when the asset intensity did not improve. When sales decline, selling the company's assets is risky because the company will lose a specific investment. With the agency theory also resulted in cost stickiness (stickiness costs). Managers prefer to retain the resources bound to save their reputation if there is a restructure change (Dewi, 2012). Also, agency theory is also performed by a manager by maintaining the company's fixed asset so that the value of fixed assets remains high and the manager is considered to be successfully developed the company (Jensen and Meckling, 1976). With the high value of fixed assets, the costs of fixed assets such as depreciation costs, maintenance costs, etc. will also trigger high-cost stickiness. Cost stickiness on operating costs will be higher in the companies that use more assets of the company in running its operations. So that the findings could support the second hypothesis that cost stickiness in operating costs will increase following the asset intensity. The results of this study support the previous research by Rahmadi (2012), who found that the level of cost stickiness of operating costs increased following the asset intensity (the ratio of total assets towards the total revenue).

5. **Conclusion, Implications and Limitations**

5.1 **Conclusion**

Based on the results of the research, analysis, and discussion that has been done, it can be concluded that the first hypothesis is rejected. It proves that in the period of the study, the cost stickiness in the SG&A costs does not occur in manufacturing companies in Indonesia. It is proved by the changes in operating costs when the company's sales increase was not higher than when the sales decline. In the second hypothesis, it was found that the level of cost stickiness in the operating costs increased following the company's asset intensity (the ratio of total assets towards the revenue). Operational
costs will be stickier at the companies which use their assets in the business. Thus, the second hypothesis is accepted.

5.2 Implications

This study provides theoretical implications regarding cost stickiness in manufacturing companies in Indonesia. It does not find any cost stickiness in the manufacturing companies in Indonesia but instead found that the higher companies' asset intensity, the greater sticky cost behavior.

Also, the implications of the results of this study can be directed to managers in planning costs as the costs that occur do not completely change proportionally. Managers must be able to take the best decision for maintaining the company's resources or release these resources when there is a decline in sales. For investors, this study can be used as a reference in assessing the performance of companies that investors may invest its assets in the companies that can be beneficial to the investor.

5.3 Limitations

This study has some limitations, that overall operating cost is used as a measure in assessing the cost stickiness. Also, the data obtained was incomplete because it does not include data on the number of employees. This makes the study could not be developed for the use of the number of employees variable.

6. Suggestions for Future Research

For further research, it is expected that the researchers can do more research with the group specifies certain costs such as production cost and groups of non-production costs to determine the level of cost stickiness in those cost group. Also, the sample for the future study for manufacturing companies, it should differentiate the companies based on the characteristics of each of the company's manufacturing due to the possibility of cost stickiness from each companies' characteristics will be different. In a subsequent study, it is also expected to use the samples besides the manufacturing companies and also look at other factors such as macroeconomic conditions in Indonesia.
because when the macroeconomic growth happens, the possibility of cost stickiness will be higher.

REFERENCES


Windyastuti. 2010. Stickiness Kos Produksi dan Non-Produksi (Studi pada Perusahaan Plastik dan Kaca yang Terdaftar di BEJ), Buletin Ekonomi 8 (3).
Table 1.
Sampling results

<table>
<thead>
<tr>
<th>Samples Criteria</th>
<th>The Number of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of manufacturing companies listed on the Indonesian Stock Exchange in 2009-2011</td>
<td>288</td>
</tr>
<tr>
<td>The data of manufacturing companies which the operations costs are more than the number of sales</td>
<td>(4)</td>
</tr>
<tr>
<td>The number of samples which is not complete</td>
<td>(14)</td>
</tr>
<tr>
<td><strong>The samples used</strong></td>
<td><strong>270</strong></td>
</tr>
</tbody>
</table>

Sources: Secondary data which has been processed

Table 2.
Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>The average increase in (Rp)</th>
<th>The average decrease in (Rp)</th>
<th>The number of samples which experienced an increase</th>
<th>The number of samples which experienced a reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes in operating costs from the year 2009-2010</td>
<td>112,108,087,719</td>
<td>-45,731,917,228</td>
<td>103</td>
<td>32</td>
</tr>
<tr>
<td>Changes in operating costs from the year 2010-2011</td>
<td>88,735,609,713</td>
<td>-27,634,953,327</td>
<td>102</td>
<td>33</td>
</tr>
<tr>
<td>Changes in sales from the year 2009-2010</td>
<td>1,042,890,218,949</td>
<td>-629 821 988 548</td>
<td>103</td>
<td>32</td>
</tr>
<tr>
<td>Changes in sales from the years 2010-2011</td>
<td>1,261,591,033,177</td>
<td>-55,652,923,213</td>
<td>118</td>
<td>17</td>
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Sources: Secondary data which has been processed
Table 3.
ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
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<td>2</td>
<td>0.252</td>
<td>25.632</td>
<td>0.000</td>
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<tr>
<td>Residual</td>
<td>2.622</td>
<td>267</td>
<td>0.010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.125</td>
<td>269</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. onstants: log sales, dummy logsales
b. Dependent variable: log of operational costs Sources: Secondary data SPSS which has been processed

Table 4.
Regression Test Results

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>t</th>
<th>Sig.</th>
<th>Adj. R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.012</td>
<td>1.434</td>
<td>0.153</td>
<td>0.155</td>
</tr>
<tr>
<td>Log Sales ($\beta_1$)</td>
<td>0.381</td>
<td>4.944</td>
<td>0.000</td>
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<tr>
<td>Dummy Log Sales ($\beta_2$)</td>
<td>-0.046</td>
<td>-0.372</td>
<td>0.710</td>
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</tr>
</tbody>
</table>

Dependent variable: log of operational costs
Sources: Secondary data SPSS which has been processed
Table 5.
ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
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<td>Regression</td>
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<td>3</td>
<td>0.197</td>
<td>20.734</td>
<td>0.000</td>
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<tr>
<td>Residual</td>
<td>2.533</td>
<td>266</td>
<td>0.010</td>
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<td></td>
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<tr>
<td>Total</td>
<td>3.125</td>
<td>269</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Constants: log sales, dummy log sales, log sales of logasset
b. Dependent variable: log of operational costs Sources: Secondary data SPSS which has been processed

Table 6.
Regression Test Results

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>t</th>
<th>Sig.</th>
<th>Adj. R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.014</td>
<td>1.615</td>
<td>0.108</td>
<td>0.180</td>
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<tr>
<td>Log Sales ($\beta_1$)</td>
<td>0.372</td>
<td>4.905</td>
<td>0.000</td>
<td></td>
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<tr>
<td>Dummy Log Sales ($\beta_2$)</td>
<td>0.109</td>
<td>0.818</td>
<td>0.414</td>
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</tr>
<tr>
<td>Dummy Log Sales</td>
<td>-0.557</td>
<td>-3.056</td>
<td>0.002</td>
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</tr>
<tr>
<td>Log Assets ($\beta_3$)</td>
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<td></td>
<td></td>
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</tbody>
</table>

Dependent variable: log of operational costs
Sources: Secondary data SPSS which has been processed