



# Factors Affecting Cost Stickiness in Manufacturing Companies Listed on the IDX for the 2016-2022 Period

# Inayah Wulandari<sup>1</sup>, Yana Ulfah<sup>2⊠</sup>

<sup>1</sup>Universitas Mulawarman, Samarinda, Indonesia. <sup>2</sup>Universitas Mulawarman, Samarinda, Indonesia. <sup>⊠</sup>Corresponding author: yana.ulfah@feb.unmul.ac.id

#### Abstract

This study aims to examine sales growth, asset intensity, employee intensity, and leverage on cost stickiness in manufacturing companies listed on the Indonesia Stock Exchange for the 2016-2022 period. The type of research is quantitative using secondary data. The sampling technique uses the purposive sampling method with a total of 65 manufacturing companies listed on the Indonesia Stock Exchange for the 2016-2022 period. The data analysis used is SPSS 25 software. The results of this study are that sales growth and asset intensity have a positive and significant effect on cost stickiness, employee intensity has a negative and significant effect on cost stickiness.

#### Abstrak

Penelitian ini bertujuan untuk mengkaji pengaruh pertumbuhan penjualan, intensitas aset, intensitas karyawan, dan leverage terhadap kelengketan biaya pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia periode 2016-2022. Jenis penelitian ini bersifat kuantitatif menggunakan data sekunder. Teknik pengambilan sampel menggunakan metode purposive sampling dengan total 65 perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia untuk periode 2016-2022. Hasil penelitian ini adalah pertumbuhan penjualan dan intensitas aset berpengaruh positif dan signifikan terhadap kelekatan biaya, intensitas karyawan berpengaruh positif namun tidak signifikan terhadap kelekatan biaya, dan leverage berpengaruh negatif dan signifikan terhadap kelekatan biaya.

This is an open-access article under the CC-BY-SA license.

O SA

Copyright © 2024 Inayah Wulandari, Yana Ulfah.

#### Article history

Received 2024-07-10 Accepted 2024-09-14 Published 2024-11-30

#### Keywords

Cost Stickiness; Sales Growth; Asset Intensity; Employee Intensity; Leverage

#### Kata kunci

Kelekatan biaya; Pertumbuhan Penjualan; intensitas aset; intensitas karyawan; leverage

#### 1. Introduction

A company has a goal in the form of achieving maximum profits from the goods and services it manages. The company always gives its best to achieve the desired goals. Management foresight in looking at the company's environmental situation is one of the company's success, basically the company must have management that can understand cost behavior, information about cost behavior is used by managers to estimate what will happen in the future when operating costs, because cost behavior can explain the relationship between costs and activities. Cost behavior has the same or proportional relationship with the company's activities, so the proportionality implies that when the activity increases by 1%, the cost also increases by 1%, and when the activity decreases by 1%, the cost also decreases by 1% (Calleja *et al.*, 2006). However, Anderson *et al.*, (2003) states that the cost does not change the same as the change in activity, but the increase in cost is higher when the activity increases compared to when the cost decreases when the activity decreases and this pattern of cost behavior is called *cost stickiness*.

The occurrence of behavioral inconsistencies in costs is due to deliberate actions taken by company managers in the face of uncertainty in the company's activities in the future. Sticky costs occur due to uncertainty about future product demand, resulting in a tendency for managers not to adjust these costs in proportion to changes in sales volume or business activity. Managers are more likely to choose to retain unused resources rather than reduce them when sales decline.

The condition of the manufacturing sector in Indonesia has deteriorated due to the decline in production and demand, as a result of which the decline in demand has resulted in several companies taking decisions with measures such as reducing purchasing activities, reducing the number of employees and reducing inventory levels. The growth of the manufacturing sector declined because it was affected by sales fluctuations, which ultimately affected control and behavior towards costs, rising and decreasing costs were an indicator of whether companies were able to survive in sharing conditions. When sales decline in the slowdown in the manufacturing sector, the costs of other companies will also decrease, including a decrease in the number of employees, on the other hand, when there is an increase in sales that affects the growth of the manufacturing sector, production costs will also increase. A phenomenon like this indicates the existence of a phenomenon sticky cost in manufacturing companies in Indonesia, where cost behavior is asymmetric because the rate of cost decline is slower when company activity decreases, compared to cost increase when company activity increases (Apriliawati & Nugrahanti, 2015). So this study suspects that there are indications of cost stickiness in manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2016-2022 period. In addition, several variables are thought to affect the nature and level of asymmetric cost behavior, namely sales growth, asset intensity, employee intensity and leverage

#### 2. Literature Review

#### 2.1. The Deliberate Decision Theory

*Deliberate Decision Theory* or the theory of intentional decision is the theory used in this study to explain *cost stickiness*. Costs can be *Sticky* as a result of a deliberate decision made by the manager (Anderson *et al.*, 2003). The manager argues that when the company experiences a decrease in sales, then in the future or in the future the decline in sales will not occur again or sales will increase. When managers think that the decline in sales is only temporary and predict that in the future sales will increase or recover, then eliminate resources at the time of sales decline and regain those resources after sales increase resulting in the company having to spend higher costs, as a result of which the company's profits decrease (Yasukata, 2011).

When a company faces an unexpected situation, deliberate decision-making is very necessary, this is because deliberate decision-making is beneficial to align the company's cost structure strategically and optimally.

## 2.2. Sales Growth

Sales growth is used by the company as a company indicator to assess the amount of revenue obtained through the sale of goods and services and describe the extent to which the company can increase its sales activities so that stable sales are created in the company. Sales is the main activity carried out by the company to maintain the sustainability of the company's life. Uncertain and sometimes unpredictable sales growth makes managers make trade-off decisions, namely choosing to lower costs by eliminating resources or choosing to bear more costs from those resources so as to take advantage of future sales recovery.

## 2.3. Asset Intensity

According to PSAK 16 revised in 2011, assets refer to all wealth owned by individuals or companies, both in tangible and intangible forms that have value or potential to provide future economic benefits to individuals or companies. Assets play a very important role in supporting the company's operations, the value of investment invested by the company in relatively large assets can even be said that assets are company assets that absorb most of the company's capital.

## 2.4. Employee Intensity

*Employee intensity* is the ratio of the number of employees. *Employee intensity* measured from the number of employees/sales, which causes the larger the number of labor used, the greater the labor costs incurred by the company (Pichetkun and Panmanee, 2012). One of the components of sales, administrative and general costs is salary costs, so sales affect salary costs. When the company experiences a decrease in sales, the company must still bear the cost of salary while if the company takes action to dismiss employees, the company will incur relatively high costs such as employee severance costs.

## 2.5. Leverage

Leverage is a source of funds for a company or the use of assets by a company that has fixed costs, because it is obtained from loans or debts with the aim of increasing potential profits. Leverage measurement has 5 (five) leverage ratios, in this study the *leverage* ratio used is *the Debt to Assets Ratio* (DAR). *Debt to Assets Ratio* (DAR) is a ratio that measures how far the company's assets are able to guarantee the debt that is the company's obligation or how far the company's assets are financed by debt. Leverage is used by companies as a source of funds that are fixed in nature with the aim of increasing profits for shareholders *, leverage* is said to be a source of funds for companies that have fixed costs because the company receives funds that generate fixed expenses, namely debt with interest expenses.

#### 2.6. Cost Stickiness

*Cost stickiness* is an asymmetrical and disproportionate cost behavior, this is contrary to the traditional assumption on the concept of cost accounting which says that costs will change according to changes in the level of activity in the company, be it fixed costs or variable costs. The cost is *Sticky* Because when the company's activities increase, costs also increase, but when the company's activities decrease, the costs do not decrease. Indications *sticky cost* is an imbalance in resource adjustment and managers tend to choose to keep unused resources rather than reduce resources when company activity declines (Windyastuti, 2005 in Nany *et al.*, 2021). Anderson *et al.*, (2003) explain *cost stickiness* is the increase in costs when activity increases more when sales increase, compared to a decrease in costs when activity decreases when sales decrease. Costs that have indications *cost stickiness* are sales, administrative and general costs because these costs are costs whose changes do not follow the company's activities

# 3. Method

This type of research data is quantitative data using secondary data. The sampling technique uses *the purposive sampling method* with a total of 65 manufacturing companies listed on the IDX for the 2016-2022 period. The data analysis tool uses *SPSS 25* software.

Independent	Operational Definition	Measurement
Variables		
Sales Growth (X1)	Sales growth is one of the company's sources of revenue, where the revenue generated from sales is used to measure how well	$Net Sales Growth Ratio= \frac{Net Sales t - Net Sales t - 1}{Net sales t - 1}$
	the business is performing	
Asset Intensity (X2)	Asset intensity is the effectiveness and efficiency of sales in the utilization and development of assets	Total Asset Sales
Employee Intensity (X3)	<i>Employee intensity</i> is used to measure the effectiveness and efficiency of sales in the utilization and development of human resources	<u>Total Employee</u> Sales
Leverage (X4)	<i>Leverage</i> is a measure to see how much a company is financed with debt	$Debt \ to \ Assets \ Ratio \ (DAR) = \frac{\text{Total Utang}}{\text{Total Aktiva}}$
Cost Stickiness (Y)	<i>Cost Stickiness</i> Or attached costs are costs that tend to behave in a fixed way when there is a decrease in the company's activities or activities that result in a decrease in profits but are not followed by a decrease in costs. Indicators used to calculate <i>cost stickiniess</i> is the selling, administrative and general (PA&U) costs using the framework put forward by the Anderson, Banker & Janakirman (ABJ)	$Ln = \beta \left[ \frac{PA\&Ui,t}{PA\&Ui,t-1} \right]_{0} + \beta 1 Ln \right] + \beta \left[ \frac{Salesi,t}{Salesi,t-1} \right]^{*}$ Decrease_Dummy,t* Ln ] + $\mathcal{E} \left[ \frac{Salesi,t}{Salesi,t-1} \right]^{*}$ It can be seen that if $\beta 1 > 0$ , $\beta 2 < 0$ , or $\beta 1 > \beta 1 + \beta 2$ indicate the existence of cost stickiness.

Source : Review of various articles, 2024

**3.1.** Description of cost *stcikiness* measurement:

Ln PA&Ui,t	: Natural log of sales, administrative and general expenses in the T period compared to the natural log cost Sales, Administration and General in the last year of the 1
В	: Constant
Salesi,t	: Natural log of net sales in 2019 Compared to the natural log of net sales in T-1
Decrease Dummyi,t	: Variable <i>dummy</i> with a rating of 0 if the sale increase and 1 if sales decrease

## 4. Results and Discussion

## 4.1. Descriptive Statistical Analysis

The descriptive statistical test in this study was carried out to find out the description of the data about the maximum, minimum, average and standard deviation of the variables studied.

#### Inayah Wulandari, Yana Ulfah

	Ν	Minimum	Maximum	Mean	Std. Deviation		
Sales Growth	387	45	.69	.0771	.17431		
Asset Intensity	387	.16	3.54	1.3166	.64709		
Employee Intensity	387	.00	.00	.0009	.00081		
Leverage	387	.06	1.35	.4324	.21133		
Cost Stickiness	387	28	.42	.0487	.10794		
Valid N (listwise)	387						

#### **Table 2. Descriptive Statistics**

Source : SPSS Output Data 25, 2024

The average value of the sales growth variable was 0.0771, the minimum value was -0.45, the maximum value was 0.69 and the standard deviation value was 0.17431. The average value of the *asset intensity variable* was 1.3166, the minimum value was 0.16, the maximum value was 3.54, and the standard deviation value was 0.64709. The average value of the *employee intensity variable* was 0.0009, the minimum value was 0.00, the maximum value was 0.00, and the standard deviation value was 0.00081. The average value of the *leverage variable* is 0.4324, the minimum value is 0.06, the maximum value is 1.35 and the standard deviation value is 0.21133. The average value of the cost *stickiness variable* was 0.0487, the minimum value was -0.28, the maximum value was 0.42 and the standard deviation value was 0.10794.

#### 4.2. Normality Test

#### Table 3. Normality Test

			Unstandardized Residual
N			387
Normal Parametersa,b	Mean		.0000000
	Std. Deviation		.07786117
Most Extreme Differences	Absolute		.048
	Positive		.038
	Negative		048
Test Statistic			.048
Asymp. Sig. (2-tailed)			.032c
Monte Carlo Sig. (2-tailed)	Mr.		.322d
	99% Confidence Interval	Lower Bound	.310
		Upper Bound	.334

Source : SPSS Output Data 25, 2024

In table 3, it can be seen that the *monte carlo sig* (2-tailed) value is 0.322, which means that the value is greater than 0.05 (0.322 > 0.05), so it can be concluded that the data has been distributed normally.

## 4.3. Heteroscedasticity Test

		Table 4. Heteros	cedasticity T	est		
		Uns	tandardized	Standardized		
Mode	1		Coefficients		t	Mr.
		В	Std. Error	Beta		
1	(Constant)	-6.674	.336		-19.841	.000
	Sales Growth	.435	.604	.038	.721	.471
	Asset Intensity	.091	.160	.029	.569	.570
	Employee Intensity	-65.484	128.474	027	510	.611
	Leverage	.558	.483	.059	1.155	.249

Source : SPSS Output Data 25, 2024

In Table 4, it can be concluded that there are no symptoms of heteroscedasticity for each variable, because the gis value of each variable is greater than 0.05.

# 4.4. Multicollinearity Test

Madal		Coll	inearity Statistics
Model		Tolerance	BRIGHT
1	Sales Growth	.941	1.063
	Asset Intensity	.967	1.034
1	Employee Intensity	.962	1.040
	Leverage	.995	1.005

Table 5. Multicollinearity Test

Source : SPSS Output Data 25, 2024

In Table 5, it can be concluded that each variable does not have multicollinearity symptoms, because each variable has a *tolerance* value greater than 0.10 and a VIF value less than 10.

## 4.5. Uji Autokorelasi

Table 6. Autocorrelation Test						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.686a	.471	.466	.07827	1.422	
Source : SPSS	Output Da	nta 25, 2024				

In table 6, it can be concluded that there is no correlation symptom in the data of this study, because the value of 1.422 is greater than -2 and less than +2 (-2 < 1.422 > +2) or it can be said that the D-W value in the table above is located between -2 to +2.

## 4.6. Determination Coefficient Test (R2)

In Table 6, it can be seen that the adjusted R square value is 0.466 or 46.6%, so it can be concluded that the *cost* stickiness variable is influenced by the variables of sales growth, asset intensity, employee intensity, and leverage of 46.6%. Meanwhile, 53.4% was influenced by other variables that were not studied in this study.

## 1) Model Feasibility Test (Test F)

Table	7.	Test	F
-------	----	------	---

Model		Sum of Squares	df	Mean Square	F	Mr.
	Regression	2.086	4	.521	85.115	.000b
1	Residual	2.340	382	.006		
	Total	4.426	386			

Source : SPSS Output Data 25, 2024

In table 7 above, it can be seen that the F value is calculated as 85.115 > Table 2.395 with a sig value of 0.000 < 0.05, so it can be concluded that this research model is feasible to explain that the independent variable has an influence on the dependent variable.

## 2) Multiple Liniear Regression Analysis

	Та	ble 8. Multiple	Liniear Regree	ssion Analysis		
		Uı	nstandardized	Standardized		
	Model		Coefficients	Coefficients	t	Mr.
		В	Std. Error	Beta		
	(Constant)	.012	.013		.925	.356
	Sales Growth	.432	.024	.702	18.317	.000
1	Asset Intensity	.014	.006	.087	2.308	.022
	Employee Intensity	8.116	5.024	.061	1.615	.107
	Leverage	053	.019	105	-2.822	.005

Source : SPSS Output Data 25, 2024

In table 8 above, the multiple linear regression equation can be obtained as follows:

Factors Affecting Cost Stickiness in Manufacturing Companies | 840

## Y = 0.012 + 0.432 X1 + 0.014 X2 + 8.116 X3 - 0.053 X4

# Where:

- Y = Cost Stickiness
- X1 = Sales Growth
- X2 = Asset Intensity
- X3 = Employee Intensity
- X4 = Leverage

From the regression equation, it can be explained that:

- 1) The constant value is 0.012 which means that when the variables of sales growth (X1), asset intensity (X2), employee intensity (X3), and leverage (X4) are valued at 0 or considered fixed, then the cost stickiness (Y) is equal to 0.012.
- 2) The value of the sales growth coefficient (X1) of 0.432 shows that when sales growth increases by 1%, then the cost sticikiness (Y) will increase by 0.432.
- 3) The value of the asset intensity coefficient (X2) of 0.014 shows that when asset intensity increases by 1%, the cost sticikiness (Y) will increase by 0.014.
- 4) The value of the employee intensity coefficient (X3) of 8.116 shows that when employee intensity increases by 1%, the cost sticikiness (Y) will increase by 8.116.
- 5) The value of the leverage coefficient (X4) of -0.053 shows that when the leverage increases by 1%, the cost sticikiness (Y) will decrease by 0.053.

# 4.7. Uji Hipotesis (Uji t)

Based on table 8 above, the conclusion of the hypothesis can be known as follows.

- 1) The sales growth variable (X1) has a positive coefficient value of 0.0432 and a sig value of 0.000 (0.000 < 0.05) which means that the sales growth variable (X1) has a positive and significant effect on *cost stickines* (Y).
- 2) The *asset intensity* variable (X2) has a positive coefficient value of 0.014 and a sig value of 0.022 (0.022 < 0.05) which means that the asset *intensity* variable (X2) has a positive and significant effect on *cost stickines* (Y).
- 3) The employee *intensity* variable (X3) had a positive coefficient value of 8.116 and a sig value of 0.107 (0.107 > 0.05) which means that the *employee intensity* variable (X3) had a positive but insignificant effect on *cost stickines* (Y).
- 4) The *leverage* variable (X4) has a negative coefficient value of -0.053 and a sig value of 0.005 (0.005 <.05) which means that the *leverage* variable (X4) has a negative and significant effect on *cost stickines* (Y).

# 4.7.1. The Effect of Sales Growth on Cost Stickiness

Sales growth has a positive and significant effect on cost stickiness, thus the first hypothesis (H1) is accepted. When sales decline, managers tend to maintain some of the costs on the grounds that in the future sales will increase. However, if in the future sales continue to decrease, then the consequences of the decision to maintain some of these costs will cause sticky costs . In certain activities, the costs required for business activities are influenced by management decisions. The occurrence of changes in sales, either an increase or a decrease, will cause an indication of unsympathetic costs, so that when sales change, it will cause an indication of *cost stickiness*.

# 4.7.2. The Effect of Asset Intensity on Cost Stickiness

Asset intensity have a positive and significant effect on *cost stickiness*, thus the second hypothesis (H2) is accepted. When sales increase, the company will add some assets to increase demand productivity, but when sales decrease, the manager will maintain the assets that have been added on the grounds that in the future sales will increase again. When managers tend to maintain assets when sales decline this can lead to an increase in additional costs, namely in the maintenance costs of the assets, from which it causes sales, general and administrative costs to be greater thus

causing the existence of *cost sticikiness*, Because the increased cost will make the company's profit decrease

## 4.7.3. The Effect of Employee Intensity on Cost Stickiness

*Employee intensity* has no significant effect on *cost stickiness*, thus the third hypothesis (H3) is rejected. Deliberate decision-making is very necessary, this is because deliberate decision-making is useful for aligning the company's cost structure strategically and optimally. Some companies have more contract employees or Fixed-Time Work Agreement (PKWT) employees than permanent employees. When a company employs PKWT employees, the cost of adding and subtracting employees is lower than adding and subtracting permanent employees. The condition of the number of workers in Indonesia is estimated to be more than the number of workers needed by the company, therefore it is easier for companies to adjust the number of workers needed to the proportion of company activities.

## Effect of Leverage on Cost Stickiness

*Leverage* have a negative and significant effect on *cost stickiness*, thus the fourth hypothesis (H4) is accepted. A company that has a manager who can make decisions to increase long-term profits is one of good governance. By using one of the company's activities such as financing with debt, it will increase managers' awareness of the costs that will be incurred and reduce the actions of managers who prioritize personal interests. The higher the *leverage* then there is an indication *cost stickiness* This is because managers are able to adjust costs appropriately and well.

## 4. Conclusions

Based on the results of the discussion and tests carried out previously, the following conclusions can be drawn.

- 1) Sales growth has a positive and significant effect on *cost stickiness,* thus the first hypothesis is accepted.
- 2) *Asset intensity* has a positive and significant effect on *cost stickiness,* thus the second hypothesis is accepted.
- 3) *Employee Intensity* has a negligible effect on *cost stickiness*, thus the third hypothesis is rejected.
- 4) *Leverage* has a negative and significant effect on *cost stickiness,* thus the fourth hypothesis is accepted.

#### References

- Afiffah, A., Murdayanti, Y., Purwohedi, U., & Jakarta, U. N. (2018). Fenomena Perilaku Sticky Cost. *Ejournal Ukrida*, *18*(1), 141–152. http://ejournal.ukrida.ac.id/ojs/index.php/akun/issue/view/315
- Anderson, M. C., Banker, R. D., & Janakiraman, S. N. (2003). Are selling, general, and administrative costs "sticky"? *Journal of Accounting Research*, 41(1), 47–63. https://doi.org/10.1111/1475-679X.00095
- Apriliawati, R., & Nugrahanti, Y. W. (2015). Sticky Cost Behavior on Sales, Administrative and General Costs (Study on Manufacturing Companies Listed on the Indonesia Stock Exchange for the 2009-2012 Period). Optimum: Journal of Economics and Development, 5(2), 168. https://doi.org/10.12928/optimum.v5i2.7866
- Calleja, K., Steliaros, M., & Thomas, D. C. (2006). A note on cost stickiness: Some international comparisons. *Management Accounting Research*, 17(2), 127–140. https://doi.org/10.1016/j.mar.2006.02.001
- Evelyn, E. (2019). The effect of changes in sales, asset intensity, profitability, size, and leverage on cost stickiness. *Journal of Muara Economics and Business*, 2(2), 411. https://doi.org/10.24912/jmieb.v2i2.1609
- Indriana, E., Armeliza, D., & Sumiati, A. (2021). *Pengaruh asset intensity, free cash flow, profitability, dan leverage terhadap cost stickiness*. http://repository.unj.ac.id/id/eprint/14487
- Jazuli, M. A., Maksum, A., & Rini, E. S. (2020). Analysis of Factors Affecting Cost Stickiness in Manufacturing Companies Listed on the Indonesia Stock Exchange for the 2014-2018 Period. *Journal of Socio-Humanities Sciences*, 4(1), 205–222. https://doi.org/10.22437/jssh.v4i1.9917
- Nany, Magdalena, Lyna, Haloho, E... (n.d.). Sticky Cost Behavior in Trading Companies Listed on the Indonesia Stock Exchange. 21(3), 236–248.

Panmanee, P. dan. (2012). The Determinants of Sticky Cost Behavior: A structural Equation Modeling Approach.

- Pebryanti, Y., & Khomsiyah. (2023). The Effect of Sales Growth, Profitability, Asset Intensity, Company Size and Employee Intensity on Cost Stickiness. *Trisakti Economic Journal*, 4(1), 23–32. https://doi.org/10.25105/jet.v4i1.18160
- Yasukata, K. (2011). Are "Sticky Costs" the Result of Deliberate Decision of Managers? SSRN Electronic Journal. https://doi.org/10.2139/ssrn.1444746