

PalArch's Journal of Archaeology of Egypt / Egyptology

THE DETERMINANT FACTORS OF PROFITABILITY IN INDONESIA CONSUMER GOODS MANUFACTURING COMPANIES

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Eriana Kartadjumena, Anisa Permatasari, Wildan Setiawan, Desti Ardela Putri, Adi Rustandi. The Determinant Factors Of Profitability In Indonesia Consumer Goods Manufacturing Companies--Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(10), 3759-3772. ISSN 1567-214x

Keywords: Inflation, Foreign Exchange, Interest, Working Capital And Profitability.

ABSTRACT:

This study aims to analyze the determinants of profitability in Indonesian Consumer Goods Manufacturing Companies from 2015 to 2019. The external factors analyzed are inflation rates, interest rates, and foreign currency exchange rates. Meanwhile, the internal factors analyzed are the working capital turnover ratio. In addition, profitability is measured by the ratio of return on equity. This research is a quantitative study using unbalanced panel data regression analysis. Data is collected from Bank Indonesia, the Indonesia Stock Exchange, and the websites of each company. This study analyzes new unbalanced panel data from 245 years of company observations from 53 Indonesian Consumer Goods Manufacturing Companies. The results showed that the external factors of the inflation rate had a significant negative effect on profitability. Meanwhile, other factors such as interest rates, foreign currency exchange rates and working capital turnover did not have a significant effect on profitability.

RESEARCH BACKGROUND

Companies in carrying out their business activities should be aware of various monetary and non-monetary factors from both macroeconomics and microeconomics perspectives that occur in a nation. Various conditions that occur can impact business development efforts, improve capital structure, launch new products, and increase additional funds and company performance. One of the company's performance indicators in which need to on by investors and management is profitability. Profitability is a measure of a firm's effectiveness level derived from the achievement of the net income

value at the time of its operations (Husnan, 2015; Wiagustini, 2014)). The better the level of company profitability will be, the better the company's prospects. Investors' decisions are based on the reliability of company's information. The investors decide to invest their money in the company when the investment return is higher than the expected return on investment. Investors' mistakes in analyzing company information will result in losses for them. Information about the level of company profitability is one of the information analyzed by investors, as well as for investors in the manufacturing sector in Indonesia. However, the phenomenon in 2017 showed that 145 companies (around 25%) listed on the Indonesia Stock Exchange recognized a decrease in net income and 93 other companies recognized net losses (www.idx.com). This condition is certainly not expected to occur and will certainly have a negative impact on the performance of the stock market in Indonesia. Many factors can affect the level of company profitability, which can be derived from internal and external factors (Hidayati, 2014; Ramlall, 2009). The company can relatively control internal factors occurring from company management policies and decisions related to capital management, liquidity management, and cost management. Meanwhile, external factors occur from environmental factors beyond the company's control, including inflation, interest rates, exchange rates, and market growth. This study examined the determinant factor from internal and external of the company that affect their level of profitability from consumer goods industry companies listed on the Indonesia Stock Exchange in the period 2016-2019. The external factors tested were currency exchange rates, interest rates, and inflation. Besides, the internal factor being tested was the working capital growth rate. Meanwhile, the profitability was measured by the return on equity ratio. Previous studies that examined the factors that affect profitability have been conducted by several researchers but have shown inconsistency in their results. Previous research has shown that the exchange rate had a significant negative effect on profitability (Dwijayanthy & Naomi, 2009; Sasmita, Andriani, & Ilman, 2018; Setyaningsih, Sriwidodo, & Utami, 2018; Yeboah & Takacs, 2019). In the context of consumer goods companies, a decrease in the exchange rate would open up opportunities for companies to increase revenue because a company's products are more competitive and increasingly in demand in foreign markets (Ekasari & Baskara, 2018). The contrary results are shown by research from Ekasari and Baskara (2018) and Hidayati (2014) who found that the exchange rate have a significant positive effect on profitability. who found that the exchange rate had a significant positive effect on profitability. In addition, research conducted in Nigeria by Okika, Udeh, and Okoye (2018) and in Indonesia by Prasetyo and Darmawan (2017), Prastowo, Mardani, and Wahono (2018), Ulfa, Puspitaningtyas, and Bidhari (2016), Rahmadhani (2010), Welta and Lemiyana (2017) showed that the exchange rate did not influence profitability. Previous research on Pakistani and Kenyan banking shows that interest rates positively affected (Kalsoom, Khurshid, & Campus, 2016; Oywoki, Muganda, & Ondiek, 2020). This result is consistent with research on Indonesian banking, which shows that interest rates positively affected profitability (Sasmita et al., 2018; Swandayani & Kusumaningtyas, 2012; Zuchrinata & Yunita, 2019). However, contradictory

research results on Indonesian Islamic banking found that interest rates had a negative effect on profitability (Sahara & Yanita, 2013; Swandayani & Kusumaningtias, 2012; Syah & Kharismasyah, 2018; Zulifiah & Susilowibowo, 2014). Meanwhile, research from Esra (2018), Wibowo and Syaichu (2013), Ibrahim, Nurfadillah, and Purnama (2019), Natalia (2019), Rachmawati and Marwansyah (2019), Hidayati (2014) and Dwijayanthi and Naomi (2009) show that interest rates did not affect profitability. Furthermore, research on banking in Turkey by Okumuş (2002) and in Greek banking by Zopounidis and Kosmidou (2008) found that the inflation rate negatively affected the bank's profitability. Their research results are consistent with the research results on private banking in Indonesia (Dwijayanthi & Naomi, 2009; Hidayati, 2014; Rachmawati & Marwansyah, 2019; Syah & Kharismasyah, 2018; Wibowo & Syaichu, 2013). However, research by Supriyanti (2009) in Indonesian government banking and research from Smaoui and Salah (2012) in 7 Middle East countries banking found that inflation had a positive effect on profitability. Meanwhile, research on Islamic banking in Indonesia by Swandayani and Kusumaningtias (2012) and Wibowo and Syaichu (2013) as well as on commercial banking in Europe by Demirgüç-Kunt and Huizinga (1999) found that inflation did not affect profitability. Another influencing factor studied on profitability was working capital. Previous research from Qazi, Shah, Abbas, and Nadeem (2011) on oil, gas and automobile companies in Pakistan found that working capital had a positive effect on profitability. These findings are supported by the results of research on manufacturing companies in Indonesia (Ambarwati, Yuniarta, AK, & Sinarwati, 2015; Ariani, Cipta, & Yudiaatmaja, 2016; Kulsum & Muniarty, 2020; Mualifah, Oemar, & Hartono, 2017; Nawalani & Lestari, 2015; Ningsih, 2017; Sianturi, Nainggolan, Sinaga, & Susanti, 2015). However, other research from Chotimah (2014) and Meidiyustiani (2016) failed to found that working capital could influence the profitability on Food and Beverages companies in Indonesia.

The phenomena mentioned above and previous research that show different results have prompted this research to examine the determinant factors of profitability in consumer goods companies listed on the Indonesia Stock Exchange from 2016 to 2019. This study investigated the influence of internal and external factors, namely working capital, inflation rate, interest rate, and foreign currency exchange rate, on profitability.

Research Framework and Hypothesis Development.

The influence of inflation rate on profitability

Inflation is an economic condition in a country where there is a tendency to increase the prices of goods and services in general in long run due to imbalance between the flow of money and goods (Boediono, 1998). Inflation can adversely affect the economy because skyrocketing prices impact decreasing people's purchasing power. Besides, for companies, inflation causes a decrease in income from sales of products and an increase in production and operating costs, which results in a decrease in profits (Wibowo & Syaichu, 2013). Eduardus (2013) stated that when inflation has increased, investors usually demand an additional inflation premium to compensate for

the decline in purchasing power. If the inflation rate is more than 10% per year, economic actors must be vigilant because the government's fiscal and monetary policies have no significant impact on controlling price increases. The cost of goods sold tends to increase while the value remains decreasing, which results in a decrease in profitability. Those statements above are supported by various previous studies which have found that the inflation rate negatively affected profitability (Dwijayanthy & Naomi, 2009; Hidayati, 2014; Okumuş, 2002; Rachmawati & Marwansyah, 2019; Syah & Kharismasyah, 2018; Wibowo & Syaichu, 2013; Zopounidis & Kosmidou, 2008). Therefore, this study argued that when the inflation rate is getting higher, it will decrease the company's profitability. The hypothesis is stated that below:

H₁: the inflation rate has a negative effect on profitability.

The influence of interest rate on profitability

Investors often consider the interest rate factor in making their decision (Ibrahim et al., 2019). Bank Indonesia, as the guardian institution for the stability of economics nation. Bank Indonesia has taken several monetary policy decisions, such as increasing or decreasing the rate of Certificate of Bank Indonesia (SBI). The increase of interest rate impacts the increase of deposit rates, which results in the high of credit interest rates so that investment in the economic nation will decrease. It happens, when the interest rates are high, the company will pay higher interest rates and result in reduced corporate profits (Brigham & Houston, 2012). An increase in interest rates will cut corporate profits. It happens in two ways. An increase in interest rates will increase the interest expense; so that company's profits can be reduced. Besides, when interest rates are high, the production costs will increase, and product prices will be higher so that consumers may delay their purchases and save their funds in the bank. As a result, the company's sales decreased. The turn down in company sales and profits will reduce the company's profitability. The statements above are supported by various previous studies discovering the interest rate had a negative effect on profitability (Sahara & Yanita, 2013; Swandayani & Kusumaningtias, 2012; Syah & Kharismasyah, 2018; Zulifah & Susilowibowo, 2014). Therefore, this study proclaims that when the interest rate is getting higher, it will decrease the company's profitability. The hypothesis is stated that below:

H₂: the interest rate has a negative effect on profitability.

The influence of foreign exchange rates on profitability

Every company wants to get a profit from their companies' operations. However, the exchange rate is one of the potential constraints for consumer goods companies to increase their profitability due to their dependence on imported raw materials and capital goods. The monetary policy will affect the profitability of manufacturing companies in the consumer good industry sector. When the exchange rate decreases, companies will get a bigger opportunity to increase their revenue because their production uses cheaper raw materials than usual so that the products will become more competitive and more attractive to foreign markets. However, the situation can be

contradictory. When the exchange rate increases, companies will face difficulties in competing with foreign products because the production process uses more expensive raw materials than usual, so their products cannot be sold due to failure to compete with foreign products. Then, their revenue will reduce as well as profit.

The statement above is supported by various previous studies which have found that the foreign exchange rate had a significant negative effect on profitability (Dwijayanthy & Naomi, 2009; Sasmita et al., 2018; Setyaningsih et al., 2018; Yeboah & Takacs, 2019). The hypothesis is stated that below:

H₃: the foreign exchange rate has a negative effect on profitability.

The influence of working capital on profitability

Working capital is defined as all short-term assets or current assets that consist of cash, traded securities, inventories and trade receivables to finance the company's operations daily (Brigham & Houston, 2012). The company needs to manage working capital in the early step to run its business operations. The company carries on its activities efficiently and meet its short run obligations. Hence, managing working capital management is critical to achieving the company's profitability. The company with excessive working capital will have the same impact with inadequate working capital. It has led to fail in preventing their growth. Turnover of working capital represents how many times working capital can swirl for a certain period (Kasmir, 2013). The shorter the turnover period, the faster turnover represents the company are more efficient in affecting better profitability. The statement above is supported by various previous studies which have found that the working capital turnover had a significant positive effect on profitability (Ambarwati et al., 2015; Ariani et al., 2016; Kulsum & Muniarty, 2020; Mualifah et al., 2017; Nawalani & Lestari, 2015; Ningsih, 2017; Sianturi et al., 2015). Therefore, the hypothesis is stated below:

H₄: the working capital turnover has a positive effect on profitability.

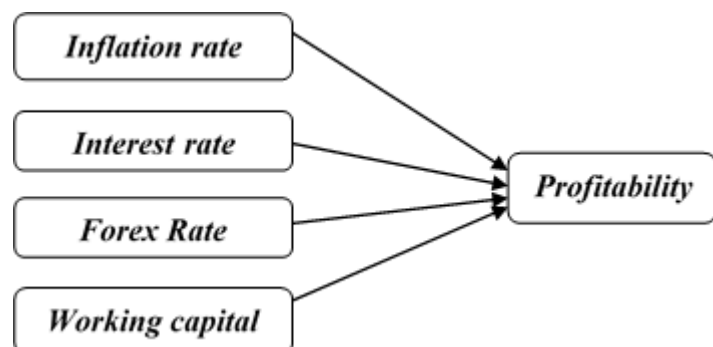


Figure 1: The Research Framework

Research Methodology

Data and Variables

The research population consisted of 295 financial statements from 59 consumer goods companies listed on the Indonesia Stock Exchange from 2015 until 2019. However, across the periods, six companies had not completed the financial statements. Hence, 45 firm-years of observation were excluded, as

the required data were incomplete. The final samples comprised a new unbalanced panel data of 245 firm-years of observation from 53 companies. Moreover, data were collected from the Indonesia Stock Index (IDX) website (www.idx.co.id), the Bank of Indonesia website (www.bi.go.id), and the companies' websites. This study consisted of one dependent variable and four independent variables. The dependent variable was profitability which proxied by the return on equity ratio (the ratio of net income relative to the shareholders' equity). Furthermore, the independent variables consisted of inflation rate, interest rate charged by Bank Indonesia, foreign exchange rate in ending date of year, and working capital turnover calculated dividing sales by the average amount of working capital—current assets minus current liabilities—during the same 12-month period.

THE METHODOLOGY

This study investigated the impact of the inflation rate, interest rate; foreign exchange rate, and working capital turnover on return on equity with the panel data multiple regression models:

$$ROE_{i,t} = \beta_0 + \beta_1 InfR_{i,t} + \beta_2 IntR_{i,t} + \beta_3 FER_{i,t} + \beta_4 WC_{i,t} \varepsilon_{i,t} \dots (1)$$

where

- $DP_{i,t}$ = Return on Equity ratio for firm i in period t
- $InfR_{i,t}$ = Inflation rate for firm i in period t
- $IntR_{i,t}$ = Interest rate for firm i in period t
- $FER_{i,t}$ = foreign exchange rate for firm i in period t
- $WC_{i,t}$ = working capital for firm i in period t
- $\varepsilon_{i,t}$ = the error terms

The types of data panel analytic models consisted of common effect, fixed effects, and random effects models. Park (2011) stated that a fixed effect model calculates by the F test to determine whether variation of intercepts across groups or time periods occurred. In comparison, Lagrange multiplier (LM) test was conducted to examine a random effect model (Breusch & Pagan, 1980). If the F test result shows that null hypothesis is not rejected in either test, the pooled OLS is chosen. Then, the Hausman specification test was then conducted to determine whether a random effect or the fixed effect models counterpart (Hausman, 1978). The random effect model will be chosen when the null hypothesis is not rejected if the individual effects are uncorrelated with the other regressors.

RESULTS AND DISCUSSION

Findings

Statistic Descriptive

Table 1. Statistic Descriptive

	N	Minimum	Maximum	Mean	Std. Deviation
ROE	245	-.6845	2.2446	.167891	.3057484

Inflation	245	.0303	.0638	.039578	.0120868
Interest rate	245	.0963	.1157	.104036	.0074157
Forex rate	245	13436	14481	13838.07	368.404
WC_turnover	245	-785.7805	152.3130	1.119093	54.7622843
Valid N (listwise)	245				

Table 1 shows that this study uses 245 years of data observation from the company's financial statement. The average of ROE in the Indonesia consumer goods companies was 16.8% (minimum = -68.4% and maximum = 224.5%). However, the average value of ROE was smaller than the standard deviation ROE value by 29.7%. It means the data was clustered and not spread out across the year of observation. Moreover, Indonesia's averaging of inflation rate across the year 2015-2019 was 3.9% (minimum = 3.03% and maximum = 6.38%). During this period, the deviation was quite low (standard deviation = 1.2% < the mean value). It means the data was evenly distributed. Similarly, Table 1 shows that Indonesia's average interest rate across the year 2015-2019 was 10.4% (minimum = 9.63% and maximum = 11.57%). During this period, the standard deviation value was lower than the mean value (SD = 0.07%). It means the data was evenly distributed. Furthermore, the average foreign exchange rate in Indonesia across the year 2015-2019 was Rp. 13,838 for US\$ 1 (minimum = Rp. 13,436 and maximum = Rp. 14,481). During this period, the standard deviation value was lower than the mean value (SD = Rp. 368). It means the data was evenly distributed. In contrast, the working capital turnover data was not evenly distributed due to the standard deviation value was higher than the average value (SD = 54.76 times per year > the mean value = 1.12 times per year). The highest turnover of working capital was 152.3 times per year.

Analysis

In order to choose the suitable model, we conducted Chow-test or likelihood ratio test (F test) to determine whether common (OLS) or fixed effect model would be favoured. The result will be described below in Table 2.

Table 2. Chow Test

Redundant Fixed Effects Tests

Equation: EN_FIXED_EFFECT

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.991508	(52,181)	0.0000
Cross-section Chi-square	238.26561 2	52	0.0000

This study noticed that the p-value < chi-square and for both models were significant (p-value < 5%). It follows the test criteria. It can be concluded that this study was appropriate to use the fixed effect model. However, we had to conduct the second test by employing the Hausman test in order to select the

fixed effect model or random effect model for a suitable regression model. The Hausman test result will be described below in Table 3.

Table 3. Hausman test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.751523	4	0.0448

This study found that p-value (Prob) was 0.0448 (less than 0.05). It means the fixed effect model was more suitable than the random effect model. This study also conducted a multicollinearity test for independent variables, and the result shows that the values of centered variance inflations factors (VIF) were $1 < CVIF < 10$. The VIF values for inflation rate, interest rate, foreign exchange rate and working capital turnover were 4,067, 5,483, 1,846, 1,011, respectively. This can be concluded that indication for multicollinearity did not exist among independent variables. Furthermore, heteroscedasticity test results using the Glejser test found that significance values of inflation rate, interest rate, foreign exchange rate, and working capital turnover were 0.463, 0.644, 0.542, and 0.461; respectively. These values were not significant (p-values (Prob) were higher than 0.05). It indicates no heteroscedasticity problems in this study.

Table 4. The F Test

R-squared	0.972081	Mean dependent var	9032.684
Adjusted R-squared	0.963444	S.D. dependent var	11978.09
S.E. of regression	2015.903	Sum squared resid	7.36E+08
F-statistic	112.5385	Durbin-Watson stat	1.985879
Prob(F-statistic)	0.000000		

Table 4 shows the F statistic value was 112.538, and the significance with Prob (F-statistic) was 0.000000. It means that the inflation rate, interest rate, foreign exchange rate, and working capital turnover set had a significant effect on return on equity simultaneously. The R^2 and adjusted R^2 values were 0.972 and 0.963. The R^2 value indicates that the dependent variable was explained by 97.2% of the independent variables' variation, while the other 2.8% variation of the independent variables was not examined in this study.

Table 5. Panel Data Regression

Dependent Variable: ROE

Method: Panel EGLS (Cross-section weights)

Date: 11/11/20 Time: 09:52

Sample: 2015 2019

Periods included: 5

Cross-sections included: 53

Total panel (unbalanced) observations: 245

Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INFR	-0.439523	0.226523	-1.940300	0.0469
INTR	-0.096011	0.411262	-0.233455	0.8157
FER	33.77997	44.23199	0.763700	0.4460
WC	0.000179	0.000433	0.413687	0.6796
C	1447.037	884.3933	1.636192	0.1035

Table 5 shows the panel data regression equation model with a fixed effect model with the form of equation as follows:

$$ROE_{i,t} = 1,447 - 0.4395InfR_{i,t} - 0.096IntR_{i,t} + 33,780FR_{i,t} + 0.0002WC_{i,t} \epsilon_{i,t}$$

Table 5 shows that the inflation rate coefficient had a negative value of -0.439523 with the probability value of 0.0469. It means that the inflation rate variable had a significant negative impact on return on equity. Hence, the first hypothesis was accepted. Then, the coefficient of interest rate had a negative value of -0.096011 with probability value 0.8157, suggesting that the interest rate had no significant negative effect on return on equity. Furthermore, the foreign exchange rate and working capital turnover variable coefficients had positive values of 33.7799 and 0.000179, respectively. The probability values for both variables were 0.4460 and 0.6796, which means that the foreign exchange rate and working capital turnover variables did not significantly and positively affect the return on equity. Hence, the second, third, and fourth hypotheses were rejected.

DISCUSSIONS

The influence of inflation rate on profitability

This study found that the inflation rate had a significant negative effect on the profitability (ROE) of Indonesian consumer goods manufacturing companies. The results are in line with the research hypothesis. The inflation rate increases, the profit value (ROE) will be decrease. It happens because the inflation rate can cause the exchange rate of money against units of products and services are reduced. It will increase the operational financing of manufacturer companies and then reduces the company's profitability. The result supports the previous research from Wibowo and Syaichu (2013), Okumuş (2002), Zopounidis and Kosmidou (2008), Syah and Kharismasyah (2018), Rachmawati and Marwansyah (2019), Hidayati (2014), Dwijayanthi and Naomi (2009).

The influence of interest rate on profitability

The result found that the interest rate had no significant negative effect on the profitability (ROE) of Indonesian consumer good manufacturing companies. It happens because an increase in interest rate will enhance the firm's interest expense and reduce firm's profitability. This study contrasts the hypothesis. However, it supports previous research from Esra (2018), Wibowo and Syaichu (2013), Ibrahim et al. (2019), Natalia (2019), Rachmawati and Marwansyah (2019), Hidayati (2014) and Dwijayanthi and Naomi (2009).

The influence of foreign exchange rates on profitability

The result shows that the foreign exchange rate had no significant positive effect on Indonesian consumer good manufacturing companies' profitability. It shows that when the Indonesian currency's exchange rate increases, its profitability will increase, and vice versa. Furthermore, if the domestic currency value is higher than the foreign currency value, it will cause a decrease in the price of imported goods. A decrease in the price of imported goods can increase the economy in the real sector, thus encouraging people to invest in that sector and consequently increasing company profitability. The results of this study do not follow the hypothesis but support research from Swandayani and Kusumaningtias (2012), Wibowo and Syaichu (2013) and Demirgüç-Kunt and Huizinga (1999).

The influence of working capital on profitability

The test results show that the working capital turnover had no significant positive effect on the profitability (ROE) in Indonesian consumer good manufacturing companies. It can be said that faster working capital turnover will increase the firm's sales and profitability. The result of the study was not aligning with the hypothesis. However, this study supports previous research of Chotimah (2014) and Meidiyustiani (2016).

CONCLUSIONS

This study advances the discussion of profitability's internal and external factors in Indonesian consumer goods manufacturing companies. This study found that the inflation rate plays a dominant factor in influencing a company's profitability due to most Indonesian consumer goods manufacturing companies obtaining raw materials for their production through purchases from abroad. The high demand for raw materials from abroad will continuously push up production costs in a certain period. It results in cost-push inflation due to the increase in production costs and reduces the company's profitability. However, this study indicates that only the inflation rate had a significant negative effect on profitability. The company still has to take notice to internal factors that the company can use to increase company profits. The company's external factors are systematic risks that have a broad, relatively similar impact to all companies. Therefore, companies must strengthen internal factors in anticipating macroeconomic changes and developments. This study has several limitations. First, the data was observed from merely one specific industry, consumer goods manufacturing, which did not control industry differentiation. Second, this study obtained samples from 53 consumer goods manufacturing companies listed on the Indonesian Stock Exchange, which considerably confined the observed variation in profitability. However, despite the sample limitation, our study has successfully observed a significant impact inflation rate on profitability.

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