Original Research Article

Identify the Determinant Factors Affecting Cash-Holding of the Automotive Industry in Indonesia

Farida Farida[1*], Nuryadin Nuryadin[1]

[1]University of Persada Indonesia YAI, Jakarta, Indonesia

Abstract: Managers need to determine the company's optimal cash holding. However, it is also important to understand the factors that influence the company's cash holding. The study uses a panel data regression analysis tool, with a sample of 12 companies selected by purposive sampling during the 2015-2020 period. The selected regression model is the fixed effect model. The results of the investigation show that the profitability and liquidity factors have a significant effect on cash holding. Profitability has a negative effect, and liquidity has a positive effect.
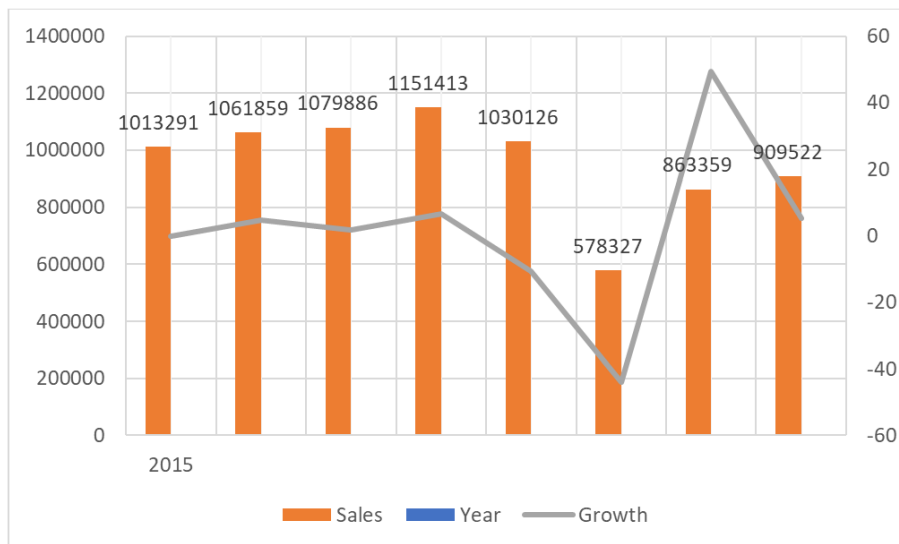**Keywords:** Cash holding, profitability, liquidity, cash flow, sales growth, leverage.

INTRODUCTION

The growth of the automotive industry in Indonesia is increasing again, even though it had slumped in 2020 due to COVID-19. In 2022 sales of four-wheeled vehicles will increase by 5.3 percent compared to the previous year. However, total sales have not recovered to what they were before COVID-19. The highest sales were reached in 2018 (picture 1). From 2015 to 2019, vehicle sales reached more than 1 million units.

Picture 1: Total sales and growth - vehicles

Along with the increase in sales of motorized vehicles, investment also increases. Investment increases then the need for cash increases. This means that companies that have investment opportunities will have little cash in hand ((Magerakis *et al.,* 2015). This will affect the cash holding policy. Cash management

needs to be managed properly. Availability of cash in ideal hands will be able to meet investment needs in the future. Liquid assets enable companies to carry out transactional and operational activities of the company. Cash or cash on hand or cash is the most liquid asset. Its uses include fulfilling short-term payments such as to suppliers, paying short-term debt, paying dividends, buying back outstanding shares, and others.

Having current assets will make it easier for companies to benefit from unexpected payments. Discounts from regular suppliers are also given for cash purchases. But excess cash can also lose the opportunity to make a profit. So that the amount of cash on hand must be managed properly, the profit level must be greater than the costs incurred. This is important in determining optimal cash holding.

A literature review regarding cash holding shows that there are several factors that significantly influence manufacturing companies. The determinant factors that influence small business cash holdings in Malaysia (Ashhari & Faizal, 2018) are growth opportunities, leverage, cash flow volatility, company size, net working capital, and capital expenditures. An empirical study in Vietnam by (Dang Ngoc *et al.,* 2020) concluded that cash flow is positively related to cash holding. A study (Joshi, 2019) investigated 483 companies listed on the Indonesian Stock Exchange and concluded that for companies with low growth, cash holding is influenced by working capital, growth opportunities, capital structure and strategic ownership of the company. Meanwhile (Aftab *et al.,* 2018) investigated the determinant of cash holdings in various regions such as Europe, Asia Pacific, North America, Africa, South America, and the Middle East. In total there are 47 countries with a sample of 5,957 companies. The first model shows that size, investment, and cash flow are positively and significantly related to cash holdings. In contrast, intangible assets, dividends, leverage, market-to-book ratio, net working capital, and profitability have a significantly negative effect on cash holdings. The second model, cash holding is associated with each region. Research (Nurul Ch & Zulfiati, 2020) uses cash holding determinant factors including net working capital, Board size, and sales growth. The liquidity factor in manufacturing companies on the Indonesian Stock Exchange has a negative effect on cash holdings, but not significantly (Adiputra & Nataherwin, 2022). Asset growth and net working capital have a positive and significant effect. Increasing stock liquidity will tend to increase cash holding (Nyborg & Wang, 2021).

RESEARCH METHODS

The sample selection in this study used a purposive sampling technique. The population is all companies listed on the Indonesia Stock Exchange for the 2015-2020 period. The sample was selected from the automotive industry which went public, there were 13 companies, but there was 1 (PT Nipress) which did not submit financial reports. So that the number of samples taken was 12 automotive and spare parts companies over a 6 years period. The total sample is 72 observations. The twelve companies are PT. Astra International (ASII), Astra Otoparts (AUTO), Garuda Metalindo (BOLT), PT Indo Kordsa (BRAM), PT Goodyear Indonesia (GDYR), PT Gajah Tunggal (GJTL), PT Indomobil Sukses International (IMAS), PT Indospring (INDS), PT Multi Prima Sejahtera (UPIN), PT Multistrada Arah Sejahtera (MASA), PT Prima Alloy Steel Universal (PRASS), PT Selamat Sempurna (SMSM).

The analysis technique used is panel data regression. The analysis panel data equation is shown by the following model (Özgür, 2021);

$$Y = \alpha_{it} + \beta_{it} X_{it} + u_{it}$$
$$i=1, ..., n; \ t=1, ..., t$$

In the formula;
Y: dependent variable, represents cash holding, X: independent variables, represents profitability, leverage, liquidity, sales growth, and cash flow. α: constant parameter, β: slope parameter u: error term. "i" subscript represents a firm, and the "t" subscript represents the year.

Cash holding is cash or securities held by the company for investment or distribution to shareholders. Profitability is the net margin or ratio of net profit to total sales. Leverage is the total debt ratio or the ratio of total debt to total assets. Liquidity is the current ratio. While sales growth is an increase/decrease in sales every year. Cash flow is the difference between cash inflow and cash outflow. Another formula used in this study, Cash flow is the difference between EBIT plus depreciation to net total assets ((Tayem, 2016).

The first step in panel data regression analysis is to do the Chow test, Hausman test, and Lagrange test. This test is used for model selection between the common effect model (CEM), Fixed effect model (FEM), or Random Effect model (REM). After selecting a suitable model, the second step is the classical assumption test. Finally processing and analysing the panel data regression equation.

RESEARCH RESULT
Descriptive Analysis

Based on table 1, the company's average cash-holding is 0.08 or 8 percent of the company's net assets. Meanwhile, the maximum cash value held by a company is 41 percent of net assets. The company is PT Multi Prima Sejahtera (LPIN) in 2020. In previous years, LPIN's cash holding was less than 40 percent. This shows that there is idle cash in the company. Along with a high level of cash holding, the highest liquidity level of 13.04 was also achieved by LPIN in 2019. This level of liquidity is far from the industry

average of 2.4 times. However, there is a company with the lowest level of liquidity, namely PT. Prima Alloy Steel Universal (PRAS) in 2019 only 0.6 times. PRAS

is a company that manufactures aluminum alloy wheels for four-wheeled vehicles.

Table 1: Statistics Descriptive

	Cash-holding	Profitability	Leverage	Liquidity	Sales growth	Cash flow
Average	0.08	0.06	0.43	2.40	0.02	0.48
Max	0.41	1.86	0.89	13.04	0.82	1.25
Min	0.00	-0.45	0.07	0.60	-0.41	-0.11
Stand Dev	0.08	0.24	0.21	2.27	0.21	0.38

Source: Data processed

Profitability is the company's ability to generate profit. The average profit for an automotive company is 6 percent of sales. The highest profitability was enjoyed by PT Multi Prima Sejahtera (LPIN) in 2017 of 186 percent. On the other hand, LPIN has also experienced a loss of 45 percent, namely in 2016. LPIN is a company that produces vehicle spare parts.

The average asset or investment financing in the automotive industry comes from debt by 43 percent. LPIN achieved the highest proportion of debt financing at 89 percent in 2016. On the other hand, LPIN also recorded the lowest debt proportion in 2019, namely only 7 percent. Apparently, LPIN is very volatile financial management.

Sales of the automotive industry on average only increased slightly, namely 2 percent. The highest

increase was experienced by LPIN in 2016 of 82 percent from the previous year. However, there are still many companies experiencing a decline in sales. PRAS experienced the highest sales decline of 41 percent in 2019. For the automotive industry cash flow, the average is 48 percent.

Panel Data Regression

This study uses a panel data regression model. First, determine the parameter model to be used, namely conducting the Chow test (Farida *et al.,* 2019). This test is to choose between the common effects model (CEM) or the fixed effects model (FEM). The CEM model is selected if the Prob value > 0.05. Conversely, if the Prob value < 0.05 then FEM is selected, it turns out that based on the Chow test (Table 2), it shows that the Prob value is 0.00 <0.05, meaning that FEM is selected.

Table 2: Chow Test

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	14.852864	(11.55)	0.0000
Cross-section Chi-square	99.281546	11	0.0000

Next, the Hausman test was carried out, namely to determine whether the random effect model (REM) or the fixed effect model (FEM). Rem is selected if the Prob value > 0.05. and if the Prob value <0.05, then FEM will be selected based on table 3. The
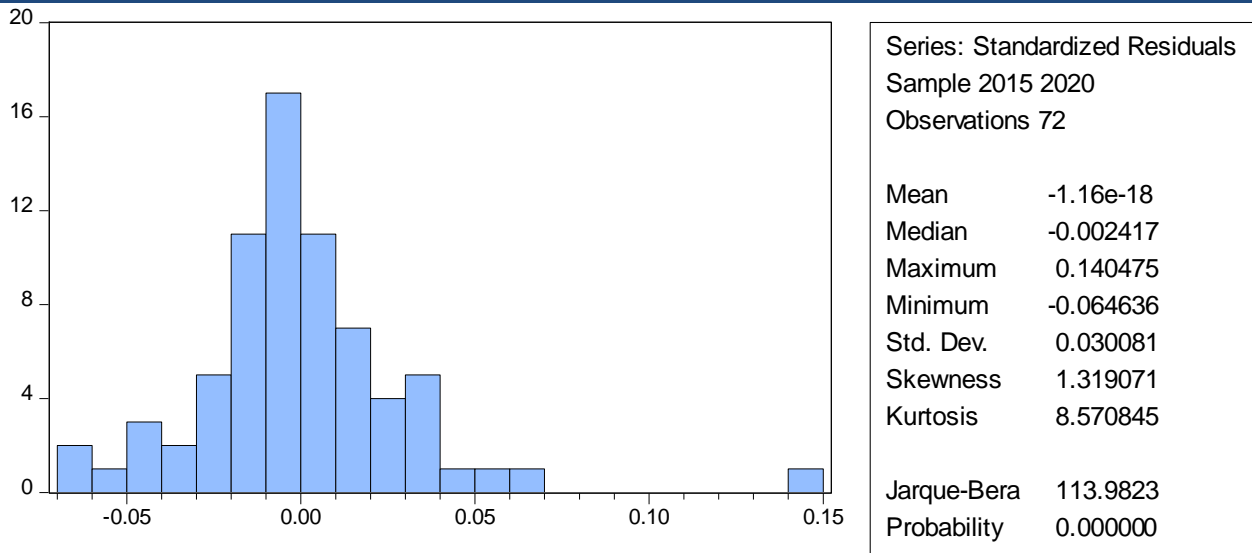
Prob value is 0.04 <0.05, then FEM is selected. Based on the Chow test and Hausman test, the FEM model was selected, so there is no need to do the Lagrange test.

Table 3: Hausman Test Result

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	11.607602	5	0.0406

CEM and FEM are panel data regression techniques using Ordinary Least Square (OLS). The model is referred to as a model without individual effects (Santoso *et al.,* 2020). The OLS approach means that it must pass the classic assumption test (Aminah *et al.,* 2022). Unless the approach used is a random effects model, then use generalized Least Squares (GLS). GLS

is able to overcome heteroscedasticity and autocorrelation, so it doesn't need to pass the classical assumption test. For OLS, the data normality test is not mandatory. However, this study will still be carried out to find out whether the data is normally distributed (picture 2).

Series: Standardized Residuals	
Sample 2015 2020	
Observations 72	
Mean	-1.16e-18
Median	-0.002417
Maximum	0.140475
Minimum	-0.064636
Std. Dev.	0.030081
Skewness	1.319071
Kurtosis	8.570845
Jarque-Bera	113.9823
Probability	0.000000

Picture 2: Normality Test Result

Based on the Jarque-Bera value of 113.98 with a Prob value of 0.000 <0.05, it means that the residuals are not normally distributed. The assumption of normality can be relaxed and not necessarily fatal when the sample size N is large enough (Pek *et al.,* 2018); the errors need not follow a normal distribution because of the Central Limit Theorem (CLT). The next classic assumption test is the multicollinearity test (Table 4). There is no correlation value of more than 0.8 between independent variables, which means that it is free of multicollinearity (Hapsari & Norris, 2022).

Table 4: Multicollinearity Test Result

	PROF	LEV	LIQ	SGROWTH	CFLOW
PROF	1.000000	-0.403886	0.387063	-0.236254	0.177000
LEV	-0.403886	1.000000	-0.721965	0.100742	-0.136688
LIQ	0.387063	-0.721965	1.000000	-0.079808	-0.055017
SGROWTH	-0.236254	0.100742	-0.079808	1.000000	-0.168920
CFLOW	0.177000	-0.136688	-0.055017	-0.168920	1.000000

Source: Data processed

In this study there were also no symptoms of heteroscedasticity, the Prob value for each variable was > 0.05 (Table 5). Testing with the Glejser test is regressing the absolute value (AbsRes) with the independent variable (Maran, 2021). Besides looking at the Prob Chi Squares, the symptoms of heteroscedasticity can be seen by the Prob of each variable.

Table 5: Heteroscedasticity Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.033061	0.025877	1.277615	0.2068
PROF	-0.007976	0.017570	-0.453962	0.6516
LEV	-0.022419	0.049874	-0.449511	0.6548
LIQ	0.003278	0.002906	1.128071	0.2642
SGROWTH	-0.005423	0.013736	-0.394775	0.6945
CFLOW	-0.022347	0.024069	-0.928470	0.3572

Source: Data processed

The results of panel data estimation with the Fixed Effect Model (Table 6) produce the following regression equation;
Cash-holding = 0.104 – 0.083*Prof -0.075*Lev + 0.013*Liq – 0.014*S-growth – 0.041*Cashflow.

From the panel data regression equation, it can be interpreted that if all independent variables are fixed, then the automotive industry holds cash of 10.4 percent of its total assets. Profitability has a negative relationship with cash- holding of 0.083, which means that every time there is an increase of 1 unit profit, there is a decrease in cash holding of 0.083 units. Indirectly, if profits increase as sales increase, cash holdings will decrease. Part of the cash funds are used to increase production/sales. Likewise for industry leverage. Still assuming the other independent variables remain constant, then every time there is an increase in

leverage by 1 unit, it will reduce cash holdings by 0.075 units. Leverage increases, meaning that investment financing increases, so that cash on hand decreases. In this equation, only the liquidity variable has a positive relationship. This means that every time there is an increase in liquidity by 1 unit, the cash held will increase by 0.013 units. Likewise, sales growth and cash flow have a negative relationship with cash holdings of 0.014 and 0.041, respectively.

Table 6: Regression Results Using Fixed Effect Model

Dependent Variable: CHOLD				
Method: Panel Least Squares				
Date: 06/14/22 Time: 09:45				
Sample: 2015 2020				
Periods included: 6				
Cross-sections included: 12				
Total panel (balanced) observations: 72				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.104149	0.045518	2.288099	0.0260
PROF	-0.083256	0.030906	-2.693900	*0.0093
LEV	-0.075279	0.087729	-0.858080	0.3946
LIQ	0.013098	0.005111	2.562503	*0.0132
SGROWTH	-0.014260	0.024162	-0.590200	0.5575
CFLOW	-0.040942	0.042338	-0.967020	0.3378
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.846390	Mean dependent var		0.078663
Adjusted R-squared	0.801703	S.D. dependent var		0.076751
S.E. of regression	0.034178	Akaike info criterion		-3.711597
Sum squared resid	0.064246	Schwarz criterion		-3.174051
Log likelihood	150.6175	Hannan-Quinn criter.		-3.497598
F-statistic	18.94059	Durbin-Watson stat		1.832534
Prob(F-statistic)	0.000000			

Based on table 6, it shows a significant F test where the Prob value is 0.00 <0.05. This means that the independent variables, namely profitability, leverage, liquidity, sales growth and cash flow, have a joint effect on cash holdings in the automotive industry. But partially, the independent variables that have a significant effect on cash holdings are profitability and liquidity. The P value for profitability is 0.009 or less than 0.05. while the liquidity value of P (prob) is 0.013 or less than 0.05. meaning that the liquidity variable partially has a significant effect on cash holding. The other independent variables partially have a P value greater than 0.05, meaning that they have no significant effect.

The determinant value or adjusted R-squares in Table 6 is 0.80. meaning that the independent variables jointly contribute to explaining the effect on cash holdings of 80 percent. The remaining 20 percent is influenced by other determinant factors that have not been included in the model.

CONCLUSION

In this study, the determinant factors that significantly influence cash holdings in the automotive industry are profitability and liquidity factors. Profitability has a negative effect on cash holding, but liquidity has a positive effect on cash holding. Profitability will increase as sales increase. Increased sales of cash needs will increase because the cost of goods sold increases. So that the less cash in hand. Other factors outside of this study need to be identified to find out other factors that affect the cash holding of automotive companies. Studies also need to be carried out to find out whether the differences in the research time period and the type of industry will have different results.

REFERENCES

- Adiputra, I. G., & Nataherwin, N. (2022). The Effects of Liquidity, Company Growth, and Net Working Capital on Corporate Cash Holding Among Manufacturing Companies Listed in Indonesia Stock Exchange During 2015-2020: 653, 49–55. https://doi.org/10.2991/aebmr.k.220501.009
- Aftab, U., Javid, A. Y., & Akhter, W. (2018). The Determinants of Cash Holdings around Different Regions of the World. *Business & Economic Review,* 10(2), 151–182. https://doi.org/10.22547/BER/10.2.7
- Aminah, A., Suhardjanto, D., Rahmawati, R., Winarna, J., & Oktaviana, D. (2022). Biological Asset Disclosure in Indonesia. *Ilomata*

International Journal of Tax and Accounting, 3(4), 397–407. https://doi.org/10.52728/ijtc.v3i4.561

- Ashhari, Z. M., & Faizal, D. R. (2018). Determinants and Performance of Cash Holding: Evidence from Small Business in Malaysia. *International Journal of Economics, Management and Accounting,* 26(2), 457–473.

- Dang Ngoc, H., Vu Thi Thuy, V., & Nguyen Duy, H. (2020). The sensitivity of cash flows to cash holdings: Case studies at Vietnamese enterprises. *Investment Management and Financial Innovations,* 17(1), 266–276. https://doi.org/10.21511/imfi.17(1).2020.23

- Farida, F., Ramadhan, A., & Wijayanti, R. (2019). The Influence of Good Corporate Governance and Corporate Social Responsibility on Firm Value: Evidence from Indonesia. *International Journal of Economics and Financial Research*, 57, 177–183. https://doi.org/10.32861/ijefr.57.177.183

- Hapsari, W. D., & Norris, N. R. (2022). Determinant of Cash Holding. *Jurnal Akuntansi*, 26(3), 358–373. https://doi.org/10.24912/ja.v26i3.960

- Joshi, H. (2019). Cash holding or Net Debt, What is Relevant for Indonesian Firms? *The South East Asian Journal of Management,* 13(1). https://doi.org/10.21002/seam.v13i1.10566

- Magerakis, E., Siriopoulos, C., & Tsagkanos, A. (2015). Cash Holdings and Firm Characteristics: Evidence from UK Market. *Journal of Risk & Control,* 2(1), 19–43.

- Maran, M. (2021). Impact of Interest Loan, Growth of Regional Gross Domestic Product, Inflation and Economic Growth on Loans at Credit Union in West Kalimantan, Indonesia. *Journal of Asian Multicultural Research for Economy and Management Study,* 2(3), 37–47. https://doi.org/10.47616/jamrems.v2i3.119

- Nurul Ch, F., & Zulfiati, L. (2020). Analysis of Cash Holding Factors at Plantation Companies Listed on BEI. Proceedings of the Annual International Conference on Accounting Research (AICAR 2019). Annual International Conference on Accounting Research (AICAR 2019), Jakarta, Indonesia. https://doi.org/10.2991/aebmr.k.200309.009

- Nyborg, K. G., & Wang, Z. (2021). The effect of stock liquidity on cash holdings: The repurchase motive. *Journal of Financial Economics,* 142(2), 905–927. https://doi.org/10.1016/j.jfineco.2021.05.027

- Özgür, E. (2021). The Panel Data Analysis to Identify the Factors Affecting Turkish Currency Assets of Foreign Deposit Banks. *Jurnal Informatika Ekonomi Bisnis*, 121–128. https://doi.org/10.37034/infeb.v3i3.97

- Pek, J., Wong, O., & Wong, A. C. M. (2018). How to Address Non-normality: A Taxonomy of Approaches, Reviewed, and Illustrated. *Frontiers in Psychology*, 9, 2104. https://doi.org/10.3389/fpsyg.2018.02104

- Santoso, N., Permatasari, R. W., & Aridinanti, L. (2020). Modelling of Payout Ratio: A Panel Regression Analysis for Indonesian Listed Bank. *IPTEK the Journal of Engineering*, 6(2), 28. https://doi.org/10.12962/j23378557.v6i2.a7211

- Tayem, G. (2016). The Determinants of Corporate Cash Holdings: The Case of a Small Emerging Market. *International Journal of Financial Research*, 8(1), 143. https://doi.org/10.5430/ijfr.v8n1p143

- Wahjoe Hapsari, D., & Nabila Roma, N. (2022). Determinant of Cash Holding. *Jurnal Akuntansi,* 26(3), 358–373. https://doi.org/10.24912/ja.v26i3.960