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Analysis of the Effect of Profitability Ratio, Solvency Ratio, Market Value Ratio, Inflation, and Exchange Rate on Stock Return (Case Study of the Agriculture Sector on the IDX from 2016 to 2019)

Muhammad Iqbal Saddam Pratama; Tony Seno Aji; Andre Dwijanto Witjaksono

Master of Management, Universitas Negeri Surabaya, Indonesia

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Abstract

The agriculture sector plays a significant function in the Indonesian economy, primarily as a food-producing sector, generating jobs for employees in this area, and one of the sources of foreign exchange for the country. This study aims to analyze the influence of Return on Equity (ROE), Debt to Equity Ratio (DER), Price Book to Value (PBV), inflation and Exchange Rate (ER) on stock returns. The population of this research are companies in the agriculture industry. The sampling approach employed in this research is purposive sampling method. This study analysis tool employs Partial Least Square. The results of this study reveal that inflation and Exchange Rate (ER) have a negative effect on stock returns, whereas Return on Equity (ROE), Debt to Equity Ratio (DER), Price Book to Value (PBV) has no effect on stock returns. For investors, those who wish to invest in the agriculture industry must look at Indonesia's macroeconomic conditions, specifically inflation and the exchange rate.

Keywords: *Return on Equity (ROE); Debt to Equity Ratio (DER); Price Book to Value (PBV); Inflation; Exchange Rate (ER); Stock Returns*

Introduction

When it comes to investing in the stock market, investors want to get the best returns with the least amount of risk (Allozi & Obeidat, 2016). Investors contribute a certain fund in order to purchase shares, with the expectation of a high return. The expectations of a high rate of return or the acquisition of a company, which will benefit them both in the short and long term, is what motivates investors to invest money. The difference between the current stock price and the prior stock price is known as stock return (Brigham & Houston, 2014). Therefore, the higher the stock return, the higher the profits for investors.

The Indonesian Stock Exchange (IDX) is open to both foreign and domestic investors. The Indonesia Stock Exchange (IDX) is organized into 9 primary sectors covering basic industry, processing/mixed industry, plantation industry, mining industry, trading industry, financial industry, property industry, consumption industry, infrastructure industry. These sectors help the Indonesian economy obviously. Between 2016 until 2019, the stock returns of many industries fluctuated widely, increasing and decreasing at various times.

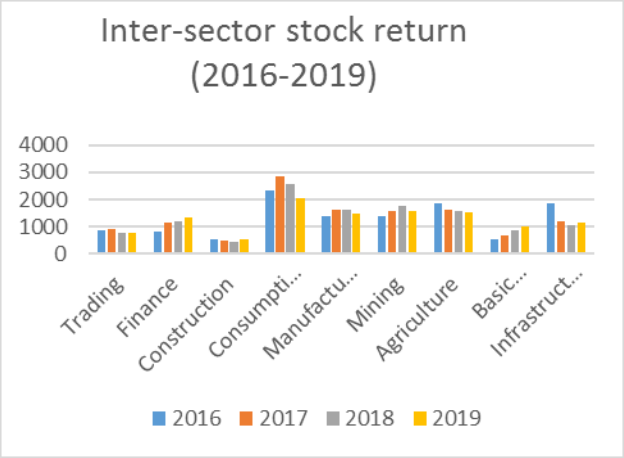

Figure 1. Inter-sector stock return (2016-2019)

There were certain industries that showed a drop between 2016 until 2019, including agriculture. In 2016, the agriculture sector's stock return was 1864,25 points, but in 2017 it was 1842,85 points, and the fall continued in 2018 and 2019. In 2018, the stock return was 1612,79 points, and in 2019, the stock return was 1551,87 points.

As previously stated, agriculture plays a vital part in the Indonesian economy, serving as both a supply of food and a source of employment for those in the industry, as well as a source of foreign exchange for the country (Nadziroh, 2020). According to the data from the Central Statistics Agency (BPS), in 2020 as of August the number of working people was 128,45 million people and the most worked in the agricultural sector with a total of 38,23 (29,76%) million workers. Based on sources from the Ministry of Agriculture, the agriculture sector in 2016 and 2017 increased to Rp. 936,4 Trillion, in 2018 there was an increase to Rp. 1.005,4 Trillion. As a result, it can be concluded that the agriculture sector is one of the fundamental sectors for the Indonesian economy.

From previous research conducted, it shows that the variables that can affect stock returns include Return on Equity (ROE), Debt to Equity Ratio (DER), Price Book Value (PBV), Inflation, and Exchange rate.

According to Nurhakim Anistia et al (2016) and Anwaar (2016), Return on Equity (ROE) has no effect on stock returns. Conversely, Khan et al (2013), Masum (2014) and Allozi & Obeidat (2016) showing different results that Return on Equity (ROE) affects stock returns positively, which means that the greater the Return on Equity (ROE), the greater the stock returns obtained by investors.

Research on the influence between Debt to Equty Ratio (DER) and stock returns is carried out by Laham (2013) which shows that Debt to Equty Ratio (DER) has a positive effect on stock returns, which means the greater the value of Debt to Equty Ratio (DER), the greater the stock return, this research is supported by Khan et al. (2013). Meanwhile, Ghi (2015) concludes that the Debt to Equty Ratio (DER) negatively affects stock returns. Moreover, Shabib-ul-hasan & Muddassir (2015), Allozi & Obeidat (2016), and Kusmayadi et al (2018) concluded that the Debt to Equty Ratio (DER) does not affect stock returns.

According to Purnamaningsih et al (2014) Price Book Value (PBV) has a positive effect on stock returns obtained by investors, which means that the greater the Price Book Value (PBV), the greater the stock returns obtained by investors. Meanwhile, Piotroski (2007) different results were revealed that Price Book Value (PBV) has a negative effect on stock returns. Additionally, according to Kusmayadi et al (2018) Price Book Value (PBV) has no effect on stock returns obtained by investors.

Furthermore, according to Utami et al (2015) shows that inflation has a negative effect on stock returns obtained, this means that the greater the inflation, the lower the stock returns obtained. However, according to Okech & Mugambi (2016) concludes that the effect of inflation on stock returns is positive. Meanwhile, Nurhakim Anistia et al (2016) shows that inflation has no effect on stock returns.

Further, Utami et al (2015) also reveal the effect of the Exchange rate on stock returns, that the Exchange rate has a positive effect on stock returns. Different conclusions are obtained by Okech & Mugambi (2016) which obtain negative results from the research. Moreover, Gays & Jr (2016) shows that the Exchange rate has no effect on the stock returns obtained.

Based on the background and issue above, this study aimed to identify the influence of Return on Equity (ROE), Debt to Equity Ratio (DER), Price Book Value (PBV), Inflation, and Exchange rate on stock returns.

Literature Review

Stock Return

Stock Return or also known as stock earnings and are changes in the value of the stock price in period t with t-ı (Halim, 2005). Abnormal return is the difference between the realized return and the expected return. Realized return is the return that has occurred which can be accessed based on the historical data of the company. Meanwhile, the expected return is the return that is expected to be obtained by investors in the future (Jogiyanto, 2017).

$$Abnormal\ return = Realized\ return - \text{Expected}\ return$$
$$= (\text{Pi, t} - \text{Pi, t} - 1) - (\frac{\sum Rij}{T})$$

Notes:

Pi,t = Share price i in period t
Pit-1 = Share price in i period t-1
Rij = Actual return in the estimation period
T = length of period

Return on Equity (ROE)

Return on Equity (ROE) is a measurement of the company's effectiveness in obtaining profits obtained by utilizing the capital owned by the company. Return on Equity (ROE) can be calculated using after tax or before tax (Nurhakim Anistia et al., 2016). Therefore, the Return on Equity (ROE) can be calculated by dividing the profit after tax by the equity holders (Masum, 2014).

$$Return\ on\ Equity\ (ROE) = \frac{Profit\ after\ tax}{Overall\ capital}$$

Debt to Equity Ratio (DER)

The percentage that shows the dominance of debt used in company financing compared to its equity can also be referred to as the Debt to Equity Ratio (DER) (Purnamaningsih et al., 2014). The debt-to-equity ratio shows the extent to which debt financing is used compared to equity financing (Kusmayadi et al., 2018b).

$$Debt\ to\ Equity\ Ratio\ (DER) = \frac{Total\ Debt}{Equity}$$

Price Book to Value (PBV)

By measuring the Price Book Value (PBV) we can find out the value of a company, by comparing the current share price compared to its book value, a company that has a large market value can be an indicator of great value for the prosperity of its shareholders (Kusmayadi et al., 2018). Price Book Value (PBV) which has a value of more than one indicates that the company is increasingly valuable, which means that the company can provide good returns in the future (Purnamaningsih et al., 2014).

$$Price\ Book\ Value\ (PBV) = \frac{\text{Share price}}{\text{Book value per share}}$$

Inflation

According to Nurhakim Anistia et al (2016) inflation is the tendency of prices to increase in general or continuously. Inflation can lead to an increase in the price of most goods in the community. Inflation can be described as a condition where the price of goods increases, the value of the currency weakens and can worsen overall economic conditions.

$$\pi = \frac{(\text{IHKt}) - (\text{IHKt} - 1)}{(IHKt - 1\ )}$$

Notes:

π = Inflation Rate
IHKt = Consumer price index t period
IHKt-1 = Consumer price index t-1 period (previous period)

Exchange Rate

Exchange rate can be defined as the price of one country's currency in units of another country's currency or commodity (usually gold or silver) (Thobarry, 2009). The nominal exchange rate is the relative price of the currencies of two countries. Meanwhile, the real exchange rate is the relative price of the goods of the two countries (Santosa, 2012).

Real Exchange Rate = Nominal Exchange Rate × Price Level Ratio

From the explanations and results of previous research, the hypothesis proposed in this study can be formulated as follows:

1. Does the profitability ratio affect stock returns in companies in the agriculture sector of the Indonesia Stock Exchange (IDX) in 2016-2019?
2. Does the solvency ratio affect stock returns in companies in the agriculture sector of the Indonesia Stock Exchange (IDX) in 2016-2019?
3. Does the market value ratio affect stock returns in companies in the agriculture sector of the Indonesia Stock Exchange (IDX) in 2016-2019?
4. Does inflation affect stock returns in companies in the agriculture sector of the Indonesia Stock Exchange (IDX) in 2016-2019?
5. Does the exchange rate affect stock returns in companies in the agriculture sector of the Indonesia Stock Exchange (IDX) in 2016-2019?

Research Methods

This study uses quantitative research methods. The data sources used are secondary data obtained from the company's annual report, stock price documentation (yahoo finance), and Bank Indonesia data documentation.

The research population are companies in the agriculture sector on the Indonesia Stock Exchange (IDX). The sampling technique used is purposive sampling with the conditions that Companies listed in the agriculture sector during the 2016-2019 period, and have complete financial statements that are in line with research needs in the 2016-2019 period per quarter, so that 11 company samples are obtained.

The independent variables (exogenous) in this study include Return on Equity (ROE), Debt to Equity Ratio (DER), Price Book Value (PBV), Inflation, and Exchange rate. Meanwhile, the dependent variable in this study is stock returns

The first data analysis technique steps determine the algorithmic analysis method. The analytical method used is structural weighting. Furthermore, determine the resampling method using the bootstrapping method using the SmartPLS 3.0 software.

Results

Outer Model Analysis Results

Table 1. Outer Loading output results

	AR	DER	ER	INFLATION	PBV	ROE
AR	1000					
DER		1000				
ER			1000			
INFLATION				1000		
PBV					1000	
ROE						1000

Source: secondary data that has been processed on SmartPLS 3.0

Based on the outer loading image above the convergent validity of the measurement model seen from the correlation between the indicator score and the construct score, it has a correlation value above 0,7 in the value shown is 1,000, and hence has met convergent validity.

Table 2. Discriminant validity output results

	AR	DER	ER	INFLATION	PBV	ROE
AR	1000	-0,039	-0,107	-0,186	0,043	0,176
DER	-0,039	1000	0,012	-0,022	0,210	-0,604
ER	-0,107	0,012	1000	-0,550	0,079	-0,056
INFLATION	-0,186	-0,022	-0,550	1000	-0,072	0,032
PBV	0,043	0,210	0,079	-0,072	1000	-0,085
ROE	0,176	-0,0604	-0,056	0,032	-0,085	1000

Source: secondary data that has been processed in SmartPLS 3.0.

Based on the table above, *discriminant validity* can be seen in the crossloading table. The correlation of the ROE construct with its indicators is higher than the correlation of the ROE indicator with other constructs, as well as the others. Therefore, it can be said that the indicators on the construct itself are better than indicators with other constructs, so that all constructs meet the criteria of Discriminant validity.

Table 3 Composite reliability and cronbach alpha

	Composite reliability	Cronbach Alpha
AR	1,000	1,000
DER	1,000	1,000
ER	1,000	1,000
INFLATION	1,000	1,000
PBV	1,000	1,000
ROE	1,000	1,000

Source: secondary data that has been processed in SmartPLS 3.0.

Based on the table above, it shows that the output results of *composite reliability* and Cronbach's alpha are all above 0,70, hence it can be concluded that they have good reliability.

Result of Inner Model Analysis

Table 4 R-square

	R Square	Adjusted R Square
AR	0,134	0,108

Source: secondary data that has been processed in SmartPLS 3.0.

Testing of the structural model is done by looking at the R-square value. The effect of ROE, DER, PBV, Inflation, and ER gives an R-square value of 0,134 which can be interpreted that ROE, DER, PBV, Inflation, and ER affect AR by 13,4% while 86,6% is influenced by other variables beyond the research.

Table 5 Path Coefficient Bootstrapping

	T Statistics	P Values
DER => AR	0.799	0.425
ER => AR	3.728	0.000
INFLATION => AR	5,612	0.000
PBV => AR	0.658	0.511
ROE => AR	1,737	0.083

Source: secondary data that has been processed in SmartPLS 3.0.

A statistical T value greater than 1,96, which is show that an exogenous effect on endogenous and if the T statistic is less than 1,96, the exogenous has no effect on endogenous.

The first hypothesis is rejected, which means there is no effect of the profitability ratio on stock returns. This is indicated by the t statistic below 1,96 with a value of 1,737.

Furthermore, the second hypothesis is rejected, meaning that the solvency ratio has no effect on stock returns, as indicated by the t statistic of 0,799.

Moreover, the third hypothesis is rejected, the market value ratio has no effect on stock returns in companies in the agriculture sector of the Indonesia Stock Exchange (IDX) in 2016-2019 as shown by the statistical t value of 0,658.

The fourth hypothesis is accepted, meaning that inflation has an effect on stock returns in companies in the agriculture sector of the Indonesia Stock Exchange (IDX) in 2016-2019, as indicated by the statistical value of 5,612 > 1,96.

But not least, the fifth hypothesis is accepted, which means that the exchange rate has an effect on stock returns in companies in the agriculture sector of the Indonesia Stock Exchange (IDX) in 2016-2019, as evidenced by the statistical T value of 3,728 > 1,96.

Discussion

1. Return on Equity (ROE) has no effect on stock returns

The original sample value (O) is 0,226 which means that if the ROE increases by one unit it will increase the abnormal return by 22,6%, but it is insufficient to make ROE affect abnormal returns because the t statistic value is only 1,737, which means that the value < 1,96, besides that the p-values have a value of 0,083 > 0,05. Therefore, the first hypothesis which states that ROE has an effect on abnormal returns is not proven.

The mean of ROE shows the number of 2,074 which means the company can provide a return from its capital of 2%, it can be said as not so high category, the capital provided cannot produce the maximum return to the company. This can make investors avoid the stock. This is also in rhyme with the results of research conducted by Nurhakim Anistia et al. (2016).

2. Debt to Equity Ratio (DER) has no effect on stock returns

The original sample value (O) is 0,084, it shows that if there is a one unit increase in the value of the Debt to Equity Ratio (DER), it will increase the abnormal return value by 8,4% of the stock return value. The t-statistical value shows a value of 0,799, which means < 1,96 and p-value of 0,448 > 0,05, which means that the latent variable Debt to Equity Ratio (DER) has no effect on abnormal returns in companies in the agricultural sector.

The mean of Debt to Equity Ratio (DER) is 979,7 or 979%, which means the company's debt both in the long and short term is almost 10 times its equity. Some investors expect that with such large debts will be a burden to the company because of the obligation for the company to pay the debt accompanied by the risk of bankruptcy that will be borne by the company and investors, so investors will avoid buying shares in this sector (Nugroho, 2013).

3. Price Book to Value (PBV) has no effect on stock returns

The original sample value (0) is 0,042, which means that every increase in the Price Book to Value (PBV) value will increase the stock return value by 4,2%. For the t-statistical value of 0,658 < 1,96 and p value of 0,511> 0,05, it means that Price Book to Value (PBV) has no effect on stock returns.

The mean of PBV value of companies in the agriculture sector is 984%, which means about 9 times the book value. This can be categorized as a company that has an expensive price, because it is 9 times the value it should be. Hence, the investors will re-analyze about their invest in shares in the company (Kusmayadi et al., 2018).

4. Inflation has a negative effect on stock returns

The original sample value (0) is -0,38, which means that each increase in one unit of inflation will decrease the abnormal return value by 0,38. Other inner data, namely t statistics and p value show a statistical value of 5,612 and a p value of 0,000, the statistical value is > 1,96, while the value is 0,000 < 0,05, it can be concluded that inflation has a negative effect on stock abnormal returns, hence the greater inflation will be the smaller the return that will be received by investors.

With an increase in the purchase price or a decrease in people's purchasing power, it also makes the company not be considered in buying shares so that the greater the inflation, the fewer shares will be purchased, this will make the price decrease and the abnormal return value will be smaller. This result is also in line with the results of Geriadi & Wiksuana (2017) which states that inflation has a negative effect on stock returns.

5. Exchange Rate has an effect on Abnormal Return

The original sample value (0) is -0,29, it shows that the exchange rate has a negative relationship with stock returns, the greater the exchange rate, the smaller the return obtained by investors. The value of -0,29 is worth every one-unit exchange rate increase, it will make the stock return decrease by 0,29. The t-statistical value shows a value of 3,728 while the p-value is 0,000, so it can be said that the exchange rate has an effect on abnormal returns because the t-statistical value is 3,728 > 1,96 and the p-value is 0,000 < 0,05.

The weakening of the rupiah (Rp) exchange rate against the US dollar, can cause investors to switch from stock instruments to US dollar instruments which results in a reduced stock return obtained by investors (Suriyani & Sudiartha, 2018). These results are in line with the results of Gay & Jr. (2016).

Conclusion

Based on the results of testing and analysis, the results obtained that *Return on Equity* (ROE), Debt to Equity Ratio (DER) and Price Book Value (PBV) have no effect on stock returns obtained by investors. Furthermore, inflation and exchange rates have a negative effect on stock returns obtained by investors.

As a matter of fact, investors engaged in agriculture sector in Indonesia should keep an eye on the country's macroeconomic conditions, especially inflation and the exchange rate, because they may have an impact on investors' future returns.

References

Allozi, N. M., & Obeidat, G. S. (2016). The Relationship between the Stock Return and Financial Indicators (Profitability, Leverage): An Empirical Study on Manufacturing Companies Listed in Amman Stock Exchange. *Journal of Social Sciences (COES&RJ-JSS)*, *5*(3), 408–424. https://doi.org/10.25255/jss.2016.5.3.408.424

Anwaar, M. (2016). Impact of Firms' Performance on Stock Returns (Evidence from Listed Companies of Ftse-100 Index London, UK). *Global Journal of Management and Business*, *16*(1). https://doi.org/ISSN 2249-4588

Brigham, & Houston. (2014). *Dasar Dasar Manajemen Keuangan* (Edisi 14). Salemba empat.

Gay, R. D., & Jr, N. (2016). *Effect of Macroeconomic Variables on Stock Market Returns for Four Emerging Economies: Brazil, Russia, India, And China*. *15*(3), 1–8.

Geriadi, M. A. D., & Wiksuana, I. G. B. (2017). Pengaruh Inflasi Terhadap Return Saham Pada Perusahaan Properti Dan Real Estate Yang Terdaftar Di Bursa Efek Indonesia (Risiko Sistematis Dan Profitabilitas Sebagai Variabel Mediasi). *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana*, *9*, 3435. https://doi.org/10.24843/eeb.2017.v06.i09.p10

Ghi, T. N. (2015). *The Impact of Capital Structure and Financial Performance on Stock Returns of the Firms in Hose * Trần Nha Ghi*. *2013*.

Halim, A. (2005). *Analisis Investasi* (2nd ed.). Salemba.

Jogiyanto, H. (2017). Teori portofolio dan analisis investasi (edisi Kesebelas). In *Yogyakarta: BPFE* (11th ed.). BPFE.

Khan, W., Naz, A., Khan, M., Khan, W. K. Q., & Ahmad, S. (2013). The Impact of Capital Structure and Financial Performance on Stock Returns "A Case of Pakistan Textile Industry." *Middle East Journal of Scientific Research*, *16*(2), 289–295. https://doi.org/10.5829/idosi.mejsr.2013.16.02.11553

Kusmayadi, D., Rahman, R., & Abdullah, Y. (2018a). *Analysis of The Effect of Net Profit Margin, Price to Book Value*, *9*, 28091–28095. https://doi.org/10.24327/IJRSR

Kusmayadi, D., Rahman, R., & Abdullah, Y. (2018b). Analysis of the Effect of Net Profit Margin, Price to Book Value, And Debt to Equity Ratio on Stock Return. *International Journal of Recent Scientific Research*, *9*(3), 23083–23086. https://doi.org/10.24327/IJRSR

Laham, A. A. M. (2013). The Effect of Financial Leverage & Systematic Risk on Stock Returns in the Amman Stock Exchange (Analytical Study – Industrial Sector). *Research Journal of Finance and Accounting*, *4*(6), 136–145. https://doi.org/ISSN 2222-2847

Masum, A. Al. (2014). Dividend Policy and Its Impact on Stock Price – A Study on Commercial Banks Listed in Dhaka Stock Exchange. *Global Disclosure of Economics and Business*, *3*(1), 9–20.

Nadziroh, M. N. (2020). Peran Sektor Pertanian Dalam Pertumbuhan Ekonomi Di Kabupaten Magelang. *Jurnal AGRISTAN*, *2*(1), 52–60.

Nugroho, B. (2013). Pengaruh Kinerja Keuangan Terhadap Return Saham (Studi Empiris Perusahaan Automotive and Component yang Listing di Bursa Efek Indonesia Periode 2005-2011). In *DIPONEGORO JOURNAL OF ACCOUNTING* (Vol. 2, Issue 1).

Nurhakim Anistia, Irni, Y., & Iradianty, A. (2016). the Effect of Profitability and Inflation on Stock Return at Pharmaceutical Industries at Bei in the Period of 2011-2014. *Asia PACIFIC JOURNAL oF Advanced Business and Social Studies*, *2*(2), 202–210. https://doi.org/2205-6033

Okech, T. C., & Mugambi, M. (2016). Effect of Macroeconomic Variables on Stock Returns of Listed Commercial Banks in Kenya. *International Journal of Economics, Commerce and Management*, *IV* (6), 390–418. https://doi.org/ISSN 2348 0386

Piotroski, J. D. (2007). Discussion of the book-to-price effect in stock returns: Accounting for leverage. *Journal of Accounting Research*, *45*(2), 469–479. https://doi.org/10.1111/j.1475-679X.2007.00241.x

Purnamaningsih, D., Gusti, N., & Wirawati, P. (2014). *Pengaruh Return On Asset, Struktur Modal, Price to Book Value Dan Good Corporate Governance Fakultas Ekonomi dan Bisnis Universitas Udayana (Unud), Bali, Indonesia*. *1*, 1–16.

Santosa, H. P. B. dan T. E. P. (2012). Analisis perilaku kurs rupiah (idr) terhadap dollar amerika (usd) pada sistem kurs mengambang bebas di indonesia periode 1997.3 – 2011.4. *Diponegoro Journal of Economics*, *I*, 1–13.

Shabib-ul-hasan, S., & Muddassir, M. (2015). Stock Returns Indicators: Debt to Equity, Book to Market, Firm Size and Sales to Price. *Journal of Poverty, Investment and Development*, *16*(1981). https://doi.org/ISSN 2422-846X

Suriyani, N. K., & Sudiartha, G. M. (2018). *Pengaruh Tingkat Suku Bunga, Inflasi Dan Nilai Tukar Terhadap Return Saham Di Bursa Efek Indonesia*. *7*(6), 3172–3200. https://doi.org/10.24843/EJMUNUD.2018.v7.i06.p12

Thobarry, A. (2009). Analisis Pengaruh nilai tukar, suku bunga, laju inflasi dan pertumbuhan GDP terhadap indeks harga saham sektor properti (kajian empiris pada Bursa Efek Indonesia periode pengamatan tahun. *Program Pascasarjana Universi-Tas Diponegoro. Semarang*, 104.

Utami, W. R., Hartoyo, S., Nur, T., & Maulana, A. (2015). The Effect of Internal and External Factors on Stock Return: Empirical Evidence from the Indonesian Construction Subsector. *Asian Journal of Business and Management*, *03*(05), 370–377. https://doi.org/ISSN 2321 - 2802.

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