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The Effect of Market Valuation Ratio and Company Value on Investor Reactions During the Pandemic in Pharmaceutical and Health Companies Listed on the Indonesian Stock Exchange Period 2020-2021

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ABSTRACT: During the COVID-19 pandemic, stock valuation through a fundamental analysis approach is an important factor to avoid losses and investor pessimism in investing in the Indonesian capital market. So this study aims to determine the influence between Market Valuation Ratio (PER) and Company Value (PBV) on Investor Reaction (TVA) in the capital market during the covid-19 pandemic. The method used in this study is a quantitative method with secondary data types and the sampling technique used is purposive sampling. Pharmaceutical and Health Companies are the population of this study which found 43 companies listed on the Indonesia Stock Exchange and 36 samples from the observation period during the 2020-2021 period. The results of this study indicate that during the COVID-19 pandemic from 2020-2021, there is no influence between the Market Valuation Ratio (PER) and Firm Value (PBV) on Investor Reaction (TVA) in the Indonesian capital market.

KEYWORDS : Price to earnings ratio (PER), Price to book value (PVB), Trading volume activity (TVA)

INTRODUCTION

The covid-19 pandemic has make all countries in the world are experiencing slowdown and decline economy in a way simultaneously. Opinion This in line with Director IMF Executive Kristalina Georgieva, who said that with existence the coronavirus outbreak can estimated in term short will happen slowdown global economy (kumparan.com, 2021). More of 100 countries in the world have do termination temporary even termination full flight so that economy down 70 to 90 percent in the major participating countries influence economy billions of people in the world, (Dunford & Qi, 2020). The weakness the economy in various countries due to Indonesia is also feeling the effects of the coronavirus or Covid-19. aggregate, Indonesia is experiencing decline economy Enough significant, namely from 4.97 in the 4th quarter of 2019 to only grew 2.97 in the quarter first 2020 (Sakti, 2020). Since pandemic entered Indonesia, many changes that have occurred happen in sector economy that can seen from the capital market. Activities in the Indonesian capital market if seen from Composite Stock Price Index (IHSG), the Indonesian capital market experienced shock with a very significant decline consequence the covid-19 pandemic in the 2020 period. Research conducted by Haryanto (2020) shows that every There is a 1% increase in Covid-19 cases will cause correct to Composite Stock Price Index by 0.03%. Recorded since beginning year until closing On March 20, 2020, the Composite Stock Price Index (IHSG) fell by 33.41% (Hadinata , 2020). The decline in the JCI from the 6300 area to the 3900 area in time three month show that the existing pandemic it is indeed very serious (Fadly, 2021). This is precisely different with the Composite Stock Price Index (IHSG) data in 2021 which shows very significant improvement.

See than the phenomenon that occurred during Covid-19 pandemic, in the period 2020 and 2021 there were response or different investor reactions that can seen from changes (IHSG) in the Indonesian capital market. The response given by investors when information expressed called investor reaction (Prabandari & Suryanawa, 2014) . Impact from the decline price stocks during the pandemic 2020 can cause concern in investor self to do investment in the capital market. Opinion This in line with opinion from Director Investa Saran Mandiri Hans Kwee said that determination of the status of the corona virus as pandemic by the World Health Organization (WHO) adds market concerns so that pressing movement shares (kumparan.com, 2021). Spread of viruses direct affect health society and finance in various sectors that influence investor confidence HaiYue Liu et al., (2020). This matter related with the sense of investor pessimism as has been said by (Kaplanski and Levy, 2010), that increasing pessimism about

future benefits so that lower investor willingness to take risk . This action is attitude from investors in see market situation due to from the covid 19 pandemic in 2020.

Usually, investors can observe A incident for understand market situation. However, perception every investor towards information different, so that perception the will become base on decision different investments (reactions) (Cahyadi et al., 2017). In taking decisions, investors always enter available factors in decision they, if market players (investors) consider information the as good information (good news) then will There is investor reactions reflected through improvement price share and trading volume shares (Listyanti, 2011). Good news impact positive on trade share whereas news bad own impact negative which results in current go out in the market shares (Hong, 2016).

There are three type indicators for measure Investor reactions are: *abnormal return*, *cumulative abnormal return* (CAR) and *trading volume activity* (TVA). Of the three the indicators mentioned, researchers more interested For use *trading volume activity* (TVA) as indicator for measure investor reaction. Researchers' reasons interested use *trading volume activity* (TVA) due to *trading volume activity* (TVA) is tool measuring or method For show market reaction to something information that can seen use approach trading volume activity shares in the capital market. *Trading volume activity* (TVA) is A key for investors to predict movement price share something company. If *trading volume activity* (TVA) shows high value so share the No prone to to change the price that occurred in a way suddenly and unexpectedly prone to to practice market manipulation. Because of this That with mark *trading volume activity* (TVA) the high in something companies, investors can make signal This as news Good *(good news)* in do decision invest in companies the.

According to Widayanto and Sunarjanto (2005), trading volume activity (TVA) is indicators that can used For see capital market reaction to information through movement parameters trading volume activity shares in the capital market. Meanwhile according to Wismar'ein, (2004) changes in trade volume shares in the capital market show activities trading shares and reflects decision investor investment. According to Foster (1986) there is a number of information that can affect trading volume shares, namely: Announcements related to with profit, Announcement dividends and announcements other like disaster natural and epidemic disease infectious.

In general investment type share is opportunity For get very high profits, will but investment type shares also have very big risk that is losses. Investors are expected more thorough For avoid risks that occur with pay attention to investment strategies For get satisfactory result . An assessment of shares carried out by an investor before the investor takes it decision invest is one of the method For prevent risk losses that occur. Fundamental analysis is analysis evaluation shares that can used by investors. Because fundamental analysis can give sufficient information For describe condition company (Tandelilin, 2010:303). For Can analyze companies , investors can use information disclosed by management company in form report audited finances .

Report finance is one of the form information provided by the party company for investors to know condition something company. According to PSAK (Statement of Standard Financial Accounting) No. 1 of 2002 report finance complete consists of of five components that is balance sheet , report profit loss , report change equity , report cash flow and records on report finance (Tandelilin , 2010:378). (Astuti et al., 2021) say that during these are investors or other stakeholders make report finances that have been audited as one of the source For take decision . Report finance give Lots useful information for investors, creditors , managers and holder shares (Brigham and Houston, 2010:102). However , a set of report finance main Not yet can give benefit maximum for user before user analyze report finance the in form ratio finance .

According to Malikova and Brabec (2012), the implementation of ratio finance by investors in choose the right company For investing capital is very influenced by preconceived notions give information into the preparation report finance said . Opinion This emphasized by Simamora (2000) who said that ratio finance is something the basis used For evaluate position and management finance company as well as stage comparison to results from the years previously and stage comparison with other companies . Lev and Sougiannis (2010) stated that if the investor will do something investment need see condition finance from the company that will selected and used information This For estimate development company in the future will come .

Wiagustini (2014:85-86) states that ratio finance company can grouped into 5 (five) parts , namely ratio liquidity , ratio solvency /leverage ratio activity , ratio profitability / profitability and ratio assessment /market. Fifth ratio finance This can measured in A report finances that have been disclosed by management company . Research This only focus on ratio market assessment with indicator *Price to Earnings Ratio* (PER) for measure Ratio Market Valuation and *Price to Book Value* (PBV) as indicator For measure Company Value, because second ratio This is indicator For determine price share whether price traded shares company assessed cheap or expensive for investors to do decision invest Amidst the Covid-19 pandemic, company values can categorized as ratio market valuation because mark company measured with price share use ratio market assessment that can seen from mark his book .

The Effect of Market Valuation Ratio and Company Value on Investor Reactions During the Pandemic in Pharmaceutical and Health Companies Listed on the Indonesian Stock Exchange Period 2020-2021

Ratio market valuation is the ratio used For measure ability company For create market value in society and investors. Aspects market valuation can seen from comparison between price share with position finance company . Wiagustini (2014:86) states Market valuation is The ratio that shows market recognition of condition financial results achieved company or measure ability management in create mark the market is above cost investment . The more tall ratio This show the more tall market recognition of position finance company and show the more expensive the shares company the Wiagustini (2010:77).

Ratio market assessment consists of from *Price to Earnings Ratio* (PER), *Dividend Payout Ratio* and *Dividend Yield Ratio* . Of the three indicator above , researchers more interested For use *Price to Earnings Ratio* (PER) as indicator For measure ratio market assessment . Because according to researchers with use *Price to Earnings Ratio* (PER) investors can get compare price share with ability company in get profit . PER can also help investors to determine which company is right or consider companies that have potential in give profit for investors to invest in the middle situation covid-19 pandemic .

Another reason researchers interested For use *Price to Earnings Ratio* (PER) as indicator For measure ratio market valuation due to according to study previously , Tandelilin (2010:320) indicators from ratio most frequent market assessment used by analysts stocks and practitioners and investors are *Price to Earnings Ratio* (PER). Then research conducted by (Parwati and Sudiartha , 2016) said that the most size used by investors to determine decision investing in the capital market is *Price to Earnings Ratio* (PER). *Price to Earnings Ratio* (PER) itself is something method or tool measure that can be used by investors as method For analyze and assess cheap or expensive price shares that have been traded based on ability company in create profit to earnings per share its shares . *The Price to Earnings Ratio* (PER) value can counted with method share price share with profit net per sheet earnings per share (*earnings per share*). Profit value net per sheet shares (*earnings per share*) itself obtained from profit clean shared with amount shares in circulation . In general , the value standard *Price to Earnings Ratio* (PER) is 15. If mark *Price to Earnings Ratio* (PER) is above 15 then can describe share is expensive. On the contrary , the more small mark *Price to Earnings Ratio* (PER) is below 15, then can depicted the more cheap share According to (Malintan , 2013) the more tall *Price to Earnings Ratio* (PER) shows price increasing shares increased by investors towards earnings per share shares , so the PER increases increase make the more expensive the shares the to his income

Research result from **Invalid source specified.**, Nurviyanti , S, W (2010), Subekti (2008), Narulita , S (2006) stated that *Price to Earing ratio* (PER) has an influence to Investor Reaction . meaning the more tall mark *Price to Earning ratio* (PER) in the company , then the more increasing investor optimism so that invite investor reaction to investing in the Indonesian capital market during the Covid-19 pandemic .

Company values is tool measure investors for know performance company , regarding with investments that have been or will they do and its prospects in the future come (Said, 2018) . According to (Ananda, 2017) the more tall mark company so the more prosperous its owners . The company's value can also be reflected from price shares . According to Sulis Setyowati, (2016) investors will choose invest in companies with mark maximum company Because mark maximum company can give prosperity holder share in a way maximum if price share increased . Therefore That can it is said that with the more height price shares , then mark companies are also increasingly height followed with height prosperity holder share . This is what makes it mark company become very important for investors.

According to (Oktaryani et al., 2021) One decision finances created can influence the decision finance other so that influence mark company . Ratio evaluation or market ratio is ratio that can dugakan as indicator For measure mark company . Opinion This in line with opinion from Muharramah and Hakim, (2021) who said that mark company can measured with use ratio evaluation or market ratio . Measurement mark company use ratio evaluation or market ratio consists of from : *Price to Earnings Ratio* (PER), *Price to Book Value* (PBV), and Ratio *Tobin's Q* . Of the three indicator above , researchers more interested For use *Price to Book Value* (PBV). Because according to researchers with use *Price to Book Value* (PBV) investors can compare price share with mark riches clean company .

(Raprayogha , 2020) say that *Price to Book Value* (PBV) is ratio that can describe price share company , whether price shares that have been traded on the capital market shows overvalued (above) or undervalued (below) value book its shares . *The Price to Book Value* (PBV) can counted with method share price per sheet share company with mark book value (*book value*) . The book *value* itself obtained from mark equity shared with amount sheet share circulating .

If mark *Price to Book Value* (PBV) is above number 1 (*overvalue*), then can confirmed price share in something company it's expensive. On the other hand , if mark *Price to Book Value* (PBV) is below number 1 (*undervalue*), then can confirmed price share in something company That cheap . However , with a Price *to Book Value* (PBV) below 1 , it tends to describe share the No worthy to be invested by investors. This is due to company with mark *Price to Book Value* (PBV) below 1 has poor performance or existence decline performance , so that push price share down and result in *Price to Book Value* (PBV) also experienced decline .

Opinion on in line with opinion from (Ang, 1997) who said that the more tall mark PBV ratio , the more tall investor assessment compared with invested funds in company the so that the more there are also big opportunities for investors to buy share company. Therefore that is , the PBV value of something company must supported with performance his company For reach proper assessment .

Research result from Rosida (2015), Ramli (2014), Subekti (2008), stated that *Price to Book Value* (PBV) has an effect to Investor Reaction . meaning the more tall mark *Price to Book Value* (PBV) in the company , then the more increasing investor optimism so that invite investor reaction to investing in the Indonesian capital market during the Covid-19 pandemic .

Study This referring to research conducted by Rahmawati, S. (2020) with Title: " *ANALYSIS OF THE EFFECT OF ROA, ROE, EPS, AND PBV ON ABNORMAL RETURN AND TRADING VOLUME ACTIVITY OF SHARES LISTED ON THE JAKARTA ISLAMIC INDEX (JII) IN THE PERIOD AROUND THE WWII EVENT" UNITED STATES-CHINA TRADE."* Differences research to be conducted conducted by researchers with study previously found in years and variables research . In research This use variables ratio Market Assessment and Company Value with period study for 2 years namely , 2020-2021 .

As for the differences variables in study This with variables study previously because , researchers only focuses on investor reactions in Pharmaceutical and Healthcare companies previously has measured use indicator *Price to Earnings Ratio* (PER) and *Price to Book Value* (PBV). Essence from study This for investors to give understanding about evaluation to price something share publicly traded companies For get profit investment , even though market conditions are still in situation the covid-19 pandemic , or with incident others that can influence market situation .

LITERATURE REVIEW

Signaling theory

Signaling theory *was* put forward first by Michael Spence. Spence (1973) said with give something signal , party owner information try give information that can utilized by the parties recipient information . Then party recipient information will adapt his behavior in accordance with his understanding to signal the .

Investor Reaction

The response given by investors when information expressed called investor reactions . Investor reactions given can in the form of positive response or negative to company (Prabandari & Suryanawa, 2014) . Reaction from investors can also result in existence change price share company . When information disclosed by the company in form report finance can become information for investors, so that from investor information can give response related with taking decision invest . In taking decisions , investors always enter available factors in decision they , if market players (investors) consider information the as good information (good news) then will There is investor reactions reflected through improvement price share and trading volume shares (Annavianti , 2011) Good news impact positive on trade share whereas news bad own impact negative which results in current go out in the market shares (Hong, 2016).

Ratio Market Assessment

Market valuation is ratio that shows market recognition of condition financial results achieved company or measure ability management in create mark the market is above cost investment Wiagustini (2014 :86). Aspects market valuation can seen from comparison between price share with position finance company . The more tall ratio This show the more tall market recognition of position finance companies and increasingly expensive shares company (Wiagustini , 2010:77).

Company Values

Company values is tool measure investors for know performance company , regarding with investments that have been or will they do and its prospects in the future come (Said, 2018) . According to Sulis Setyowati, (2016) investors will choose invest in companies with mark maximum company Because mark maximum company can give prosperity holder share in a way maximum if price share increased . According to (Oktaryani et al., 2021) One decision finances created can influence the decision finance other so that influence mark company .

HYPOTHESIS STUDY

Influence ratio market assessment of investor reaction

In general ratio market assessment with indicator *Price Earnings Ratio* (PER) can influence investor reactions in the capital market. Because through the fundamental analysis process carried out by investors using indicator *Price Earnings Ratio* (PER), investors can know information new in report finance company before take decision invest . Where investors can compare price share with

ability company in get benefits . With so investors can know price reasonable shares traded by the company on the capital market whether its shares That cheap or expensive. With *Price to Earnings Ratio* (PER) investors can also count How many amount reflected income from price share company . *Price to Earnings Ratio* (PER) shows price increasing shares increased by investors towards earnings per share shares , so the PER increases increase make the more expensive the shares the to income (Malintan , 2013). On the other hand , the more small number *Price to Earnings Ratio* (PER), then can depicted the more cheap share The information obtained by this investor will become base in taking decision For investing in the capital market. This is make ratio market assessment is closely related close with theory signal (*signalling theory*).

Research result from **Invalid source specified.**, Nurviyanti , S, W (2010), Subekti (2008), Narulita , S (2006) stated that *Price to Earing ratio* (PER) has an influence to Investor Reaction . meaning the more tall mark *Price to Earning ratio* (PER) in the company , then the more increasing investor optimism so that invite investor reaction to investing in the Indonesian capital market during the Covid-19 pandemic .

Based on description on can formulated Hypothesis as following :

H1: Ratio Market Assessment with indicator *Price Earnings Ratio* (PER) influential positive to Investor reactions during the Covid-19 pandemic .

Influence mark company to investor reaction

Company values with indicator *Price to Book Value* (PBV) can influence investor reactions in the capital market. Because through the fundamental analysis process carried out by investors using *Price to Book Value* (PBV) indicator , investors can know information new in report finance company before take decision invest . Investors can know whether price shares traded on the capital market are overvalued value riches clean his company or no . If mark *Price to Book Value* (PBV) is above number 1 (*overvalue*), then can confirmed price share in something company it's expensive. On the other hand , if mark *Price to Book Value* (PBV) is below number 1 (*undervalue*), then can confirmed price share in something company That cheap . The information obtained by this investor will become base in taking decision For investing in the capital market. This is make mark companies are closely related close with theory signal (*signalling theory*).

Research result from Rosida (2015), Ramli (2014), Subekti (2008), stated that *Price to Book Value* (PBV) has an effect to Investor Reaction . meaning the more tall mark *Price to Book Value* (PBV) in the company , then the more increasing investor optimism so that invite investor reaction to investing in the Indonesian capital market during the Covid-19 pandemic .

Based on description on can formulated Hypothesis as following :

H2: Firm Value with indicator *Price to Book Value* (PBV) has an effect positive to Investor reactions during the Covid-19 pandemic.

RESEARCH METHODS

Study This use approach quantitative with secondary data from report finance Pharmaceutical and Healthcare companies listed on the IDX for the 2020-2021 period . Research This use method *purposive sampling* as technique taking sample . Data analysis techniques used in study This is use multiple linear analysis with help *IBM SPSS Statistics software* Version 26. Engineering flow deep data analysis study This covering analysis statistics descriptive , assumption test classic and testing hypothesis .

Table Sample Determination

Criteria	Amount
Companies listed on the Indonesia Stock Exchange (IDX) during 2020-2021 period	43
Companies that use Indonesian currency (Rp) to prepare reports finance during 2020-2021 period	(43)
Companies that do not publish report quarterly financials in a way complete during 2020-2021 period	(7)
Total sample	36

Definition Operational Variables

Investor Reaction

Investor reaction with indicator *trading volume activity* (TVA) is tool measuring or method For show market reaction to something information that can seen use approach trading volume activity shares in the capital market. Opinion above in line with opinion from Widayanto and Sunarjanto (2005), who said that *trading volume activity* is indicators that can used For see capital market

reaction to information through movement parameters trading volume activity shares in the capital market. If *trading volume activity* (TVA) shows high value so share the No prone to to change the price that occurred in a way suddenly and unexpectedly prone to to practice market manipulation . *Trading volume activity* (TVA) can counted with formula as following :

$$\text{TVA} = \frac{Trading\ volume\ for\ the\ period\ 2020-2021}{Volume\ of\ shares\ outstanding\ for\ the\ period\ 2020-2021}$$

Ratio Market Assessment

Ratio market assessment with indicator *Price Earnings Ratio* (PER) is tool measuring or method For compare price share with ability company in get profit . If the price share counted use *Price Earnings Ratio* (PER), investors can know ability company in reach profits and prices reasonable from something share company . If *Price to Earnings Ratio* (PER) shows price increasing shares increased by investors towards earnings per share shares , so the PER increases increase make the more expensive the shares the to income (Malintan , 2013). On the other hand , the more small number *Price to Earnings Ratio* (PER), then can depicted the more cheap share The Price *Earnings Ratio* (PER) can counted with formula as following :

$$PER = \frac{Stock\ Price}{Earning\ Per\ Share}$$

Company Values

Company values with Price to Book Value (PBV) indicator is tool measuring or method For compare price share with mark riches clean company . If mark *Price to Book Value* (PBV) is above number 1 (*overvalue*), then can confirmed price share in something company it's expensive. On the other hand , if mark *Price to Book Value* (PBV) is below number 1 (*undervalue*), then can confirmed price share in something company That cheap . *Price to Book Value* (PBV) can counted with formula as following :

$$PBV = \frac{Stock\ Price}{Book\ Value}$$

RESULTS

Statistical Test Descriptive

Statistics descriptive is method analysis used For get description or description data that is seen from average value (*mean*), value maximum, minimum and standard deviation. Where the minimum value is mark lowest obtained of each variable . While mark maximum is mark highest obtained from each variable research . The mean value is the average value of every variables studied. And the value standard deviation is data distribution in research that can reflect heterogeneous data or homogeneous .

Calculation statistics descriptive used in study This is Ratio market assessment with indicator *Price Earnings Ratio* (PER) as (X1), Company value with indicator *Price to Book Value* (PBV) as (X2), and Investor reaction with indicator *Trading Volume Activity* (TVA) as (Y). The results statistics descriptive data obtained as following:

Statistical Test Results Table Descriptive

	N	Minimum	Maximum	Mean	Standard Deviation
PER	32	7.55	99125.92	3204.7391	17505.92719
PBV	32	0.89	13.60	3.4013	2.67309
TVA	32	0.00	2.32	0.4200	0.50909
Valid N (listwise)	32				

Source: Processed secondary data, (2026)

Based on results analysis statistics descriptive above , it is known that amount sample in study This is 32. This is due to previous data with amount sample as many as 36 no fulfil assumptions classical (Normality and Autocorrelation) so that researchers eliminate some categorized data as extreme data (*outliers*) and transform the data into a Double-Log model using transformation root (SQRT). The purpose of method transformation is normalize a data from data that is not distributed normally without change the original data in study this . As for the conclusion from statistics descriptive as following :

Price to Earnings Ratio (PER)

Price to Earnings Ratio (PER) has minimum value 7.55, maximum value 99125.92 with an average of 3204.7391 and standard deviation 17505.92719. From the results the show that , the minimum value was owned by PT Tempo Scan Pacific Tbk in 2020 and the maximum value was owned by PT Pyridam Farma Tbk in 2021 and the average (mean) *Price Earnings Ratio* (PER) value of 18

Pharmaceutical and Health companies during the Covid -19 pandemic with time observation for 2 years (2020-2021) was 3204.7391 times more expensive than price naturally . While For relative data variance big Because see from magnitude mark standard deviation with average value or can it is said mark standard deviation the more No accurate with the average value .

Price to Book Value (PBV)

Price to Book Value (PBV) own minimum value 0.89, maximum value 13.60 with an average of 3.4013 and standard deviation 2.67309. From the results the show that the minimum value is owned by PT Royal Prima Tbk in 2020 and the maximum value is owned by PT Indofarma Tbk in 2021 and the average (mean) *Price to Book Value* (PBV) of 18 Pharmaceutical and Healthcare companies during the Covid-19 pandemic with time observation for 2 years (2020-2021) was 3,4013 times more expensive than mark his book . Meanwhile For relative data variance small Because see from magnitude mark standard deviation with average value or can it is said mark standard deviation the more accurate with the average value .

Trading Volume Activity (TVA)

Trading Volume Activity (TVA) has minimum value 0.00, maximum value 2.32 with an average of 0.4200 and standard deviation 0.50909. From the results the show that , the minimum value is owned by PT Sejahteraraya Anugrahjaya Tbk in 2020 and the maximum value is owned by PT Itama Ranoraya Tbk in 2021 and the average (mean) *Trading Volume Activity* (TVA) value of 18 Pharmaceutical and Healthcare companies during the Covid-19 pandemic with time observation for 2 years (2020-2021) amounting to 0.4200. Meanwhile For relative data variance big Because see from magnitude mark standard deviation with average value or can it is said mark standard deviation the more No accurate with the average value .

Normality Test

One-Sample Kolmogorov-Smirnov Test

	Unstandardized Residual
N	32
Normal Parameters [a,b] Mean	0.0000000
Standard Deviation	0.32954165
Most Extreme Differences Absolute	0.133
Positive	0.133
Negative	-0.093
Test Statistics	0.133
Asymp . Sig. (2-tailed)	0.158 [cd]

Source: Processed secondary data , (2026)

Based on results above , it is known that mark significance obtained with amount sample 32 is 0.158 which means 0.158 > 0.05 so the data is distributed normally and fulfilling assumptions classic normality .

Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
PER	0.998	1,002
PBV	0.998	1,002

Source: Processed secondary data, (2026)

Multicollinearity test results on can concluded as following:

Price to Earnings Ratio (PER)

Tolerance Value from PER variable is 0.998 > 0.1 and the value *Variance Inflation Factor* (VIF) is 1.002 < 10 so PER variable is stated No happen symptom multicollinearity

Price to Book Value (PBV)

Tolerance Value from PBV variable is 0.998 > 0.1 and the value *Variance Inflation Factor* (VIF) is 1.002 < 10 so PBV variable is stated No happen symptom multicollinearity

Heteroscedasticity Test

Model	Significance
(Constant)	0.051
PER	0.348
PBV	0.575

Source: Processed secondary data , (2026)

Heteroscedasticity results with Glesjer test method on can concluded as following :
Price to Earnings Ratio (PER)
Significance value from PER variable is 0.348 > 0.05 which means No there is symptom heteroscedasticity in the regression model
Price to Book Value (PBV)
Significance value from PBV variable is 0.575 > 0.05 which means No there is symptom heteroscedasticity in the regression model

Autocorrelation Test

Autocorrelation test is testing that has objective for test whether in the regression model there is correlation between error disturbance in period t with error disturbance in the previous period t-1. Autocorrelation test in study This using Durbin-Watson (DW). The following is criteria in Durbin-Watson (DW) test:
If value d < dL or d > 4 – dL then in testing hypothesis zero rejected, which means there is autocorrelation.
If mark dU < d < 4 – dU so in testing hypothesis zero accepted, which means no there is autocorrelation.
If dL value < d < dU or 4 – dU < d < dL then in testing No produce conclusion.

Autocorrelation test results can show in the table following:

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin-Watson
1	0.414 [a]	0.171	0.114	0.34072	1,618

Source: Processed secondary data, (2026)

Based on autocorrelation test results above , the DW (d) value obtained is 1.618. This value will compared to with mark Durbin-Watson (DW) table with level significance of 5%. Where the number sample (N) in study This is 32 and the total variables independent 2 (k=2). Then the value obtained from Durbin-Watson (DW) table as following :

dL = 1.3093 4-dL = 2.6907
dU = 1.5736 4-dU = 2.4264

Models that can fulfil criteria testing autocorrelation so that can it is said No existence symptom autocorrelation is dU < d < 4 – dU. With so can known that in study This No happen symptom autocorrelation . Because 1.5736 values dU more small of 1,618 DW (d) values and DW (d) values are greater small of 2.4264 values 4 – dU , (dU < d < 4 – dU)

Analysis Multiple Linear Regression

Analysis multiple linear regression used For know connection influence between variable free (independent) of variables dependent . Where the variable free (independent) in study This consists of from 2 variables namely , Price to Earnings Ratio (PER) and Price to Book Value (PBV). Then variables dependent (dependent) used in study This is Trading Volume Activity (TVA).

The results analysis multiple linear regression can displayed as following:

Model	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	0.255	0.180	
PBV	0.002	0.001	0.318
PBV	0.145	0.098	0.251

Constant is alpha value of equality regression with form equality regression multiple that is , Y = α + β1X1 + β2X2 + e. From the table above, can seen that mark of alpha (α) = 0.255, β_1 = 0.002 and β_2 = 0.145. The negative sign (-) is sign relationship that is not one way Where increase from variables independent will result in decline variables dependent. While For sign positive (+) is sign

one - way relationship Where increase or decline variables independent also participate result in increase or decline variables dependent. Then the equation model regression multiple as following:

Y = 0.255 + 0.002 + 0.145 + e

Equation model regression multiple can conclude as following:

Alpha (α) = 0.255 means alpha value (α) has mark positive that describes one - way relationship between variables free (independent) and variable dependent . This is can show If second variables independent , namely PER (X1) and PBV (X2) have a value of 0, then TVA (Y) value is 0.255.

β_1 = 0.002 means mark PER variable (X1) has mark positive that describes connection one way between PER and TVA (Y) variables . This show that If the PER variable (X1) experienced 1% increase then will result in increase in the TVA variable (Y) by 0.002.

β_2 = 0.145 means mark PBV variable (X2) has mark positive that describes connection one way between PBV (X2) and TVA (Y) variables . This show that If PBV variable (X2) experienced a 1% increase means TVA (Y) will increase by 0.145.

Hypothesis Testing

Hypothesis Testing is something questions that show suspicion about connection between two variables or more , Sugiyono (2017:89). Formulation hypothesis in study This is as following :

H1: Ratio Market Assessment with indicator *Price Earnings Ratio* (PER) influential positive to Investor reaction (TVA) during the Covid-19 pandemic .

H2: Firm Value with indicator *Price to Book Value* (PBV) has an effect positive to Investor reaction (TVA) during the Covid-19 pandemic .

Coefficient Test Determination

Coefficient Determination is description from variables independent measuring how much Far his abilities in explain variation variables dependent . Coefficient value determination is between 0 and 1 with look at the Model Summary table in the Adjusted R- *Square* column . If in testing coefficient determination Adjusted R - *Square* value obtained approaching 0, meaning the value obtained is very small so that can it is said that , in testing This the abilities possessed by the variables very limited independence For explain variation variables dependent , on the other hand if Adjusted R - *Square* value obtained approaching 1, meaning in testing This variables independent can give almost all required information For predict variation variables dependent (Ghozali , 2021). The results testing coefficient determination as following :

Coefficient Test Results Table Determination

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	0.414 [a]	0.171	0.114	0.34072

Source: Processed secondary data, (2026)

Based on table on mark coefficient determination in the Adjusted R- *Square* column is 0.114 which means the value obtained is very small and more approaching 0 and away from 1. So can it is said that , the variables independent used in study This own very limited capabilities For explain variation variables dependent . Because the variables independent used in study This that is , the ratio market valuation (PER) as X1 and value company (PBV) as X2 only own ability or contribution by 11.4% for explain variables investor reaction (TVA) as variables dependent . Meanwhile the rest 89.6 % is explained by the variables or other factors in study This or outside study This .

F test

F statistical test is instruction For see statistical tests partial t and not including testing For see variables independent in a way simultaneous influence variables dependent , if in the F statistical test shows the result significant , then can confirmed in the partial t test will there is one variables independent or all variables influential independent to variables dependent , on the other hand If in the F test shows results that are not significant , then can confirmed in the partial t test no There is variables influential independent to variables dependent , (Ghozali , 2021). Criteria in taking the F test decision is with see mark significance by 5%. If the value probability significance < 0.05 then H0 is rejected and Ha is accepted . This is give indication that there is one or all influential independent variables to variables dependent (Ghozali , 2021).

Hypothesis used in the F test as following :

The Effect of Market Valuation Ratio and Company Value on Investor Reactions During the Pandemic in Pharmaceutical and Health Companies Listed on the Indonesian Stock Exchange Period 2020-2021

H_0 : Ratio market assessment with indicator *Price to Earnings Ratio* (PER) and Company Value with indicator *Price to Book Value* (PBV) does not influential to Investor Reaction (TVA) during the Covid-19 pandemic

H_a : Ratio market assessment with indicator *Price to Earnings Ratio* (PER) and Company Value with indicator *Price to Book Value* (PBV) has an effect to Investor Reaction (TVA) during the Covid-19 pandemic

The results of the F test can seen in the table following:

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.697	2	.348	3,000	.065 [b]
	Residual	3,367	29	.116		
	Total	4,063	31			

a. Dependent Variable: Y
b. Predictors: (Constant), X2, X1

Source: Processed secondary data , (2026)

Based on the results of the F test in table 4.9 above can be known that mark probability significance of 0.065 > 0.05. Therefore That can concluded that H_0 accepted and H_a rejected , which means Ratio market assessment with indicator *Price to Earnings Ratio* (PER) and Company Value with indicator *Price to Book Value* (PBV) does not influential to Investor Reaction (TVA) during the Covid-19 pandemic .

t-test

t -statistic test is basically is testing hypothesis that shows how much big influence variables independent individually can explain variation variables dependent and criteria in taking partial t test decision with see mark significance by 5%. If the value probability significance <0.05 then H0 is rejected and Ha is accepted , (Ghozali , 2021). The hypothesis used in the t-test as following :

H_0 : Ratio market assessment with indicator *Price to Earnings Ratio* (PER) and Company Value with indicator *Price to Book Value* (PBV) does not influential to Investor Reaction (TVA) during the Covid-19 pandemic

H_a : Ratio market assessment with indicator *Price to Earnings Ratio* (PER) and Company Value with indicator *Price to Book Value* (PBV) has an effect to Investor Reaction (TVA) during the Covid-19 pandemic

The results of the t-test can be seen in the table following:

Coefficients [a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.255	.180		1,413	.168
	X1	.002	.001	.318	1,878	.070
	X2	.145	.098	.251	1,481	.149

a. Dependent Variable: Y

Source: Processed Secondary Data , (2022)

Based on t-test results in the table above , can concluded as following :

Price to Earnings Ratio (PER)

Probability value significance of PER obtained of 0.070 > 0.05. With so H_0 can accepted and rejected H_a and the results the can concluded that variables ratio market assessment with indicator *Price to Earnings Ratio* (PER) is not influential to investor reaction (TVA)

Price to Book Value (PBV)

Probability value significance of the PBV obtained of 0.149 > 0.05. With so H_0 can accepted and rejected H_a and the results the can concluded that variables mark company with indicator *Price to Book Value* (PBV) does not influential to investor reaction (TVA). Based on results testing statistics in a way partial or t-test, research This can give indication that the covid-19 pandemic is not only influence health human , but investor interest in investing in the capital market also helps affected by the covid-19 pandemic .

Because with openness information company through disclosure report finance during the pandemic , investors do not make matter This as information that can influence investor decisions to investing in the capital market. Investors are more tend see the covid-19 pandemic as information that can threaten investors to get profit invest in the capital market.

This matter can proven from testing coefficient determination that has been done previously , where variables dependents used in study This that is Investors' reaction to indicator *Trading Volume Activity* (TVA) no can explained by variables Ratio market valuation (PER) and company value (PBV) as variables independent . Or can it is said variables market valuation (PER) and company value (PBV) are not own ability For explain variables Investor reaction (TVA). Due to the variable independent used in study This only own ability or contribution by 11.4% for explain variation variables dependent and 89.6% can explained by variables or other factors in study This or outside study This .

CONCLUSION AND SUGGESTIONS

Conclusion

Based on results and discussions that have been described previously , then can concluded that :

1) Test results hypothesis First in a way partial declare that , Ratio market valuation (PER) no influential or influential negative to Investor reaction (TVA) in the capital market during the Covid-19 pandemic
2) Test results hypothesis second in a way partial state that , the company value (PBV) is not influential or influential negative to Investor reactions (TVA) in the capital market during the Covid-19 pandemic

Suggestion

1) Recommended to Pharmaceutical and Healthcare companies listed on the Indonesia Stock Exchange (IDX) during the Covid-19 pandemic to more optimize its performance and capable For create material the standard Alone so that matter This can become factor important For increase investor optimism in invest .
2) Recommended to researchers furthermore For add sample study with method add sectors and companies . So that can reflect investor reactions in general overall in the sectors on the Indonesia Stock Exchange (IDX) during the Covid-19 pandemic .
3) Recommended to researchers furthermore For add other variables in describe price share to investor reactions as step For taking decision investing . Other variables that can used by researchers furthermore such as , Earnings Per Share (EPS), Return on Equity (ROE), Debt to Equity Ratio (DER) and Dividend Yield (DY).

REFERENCES

1) Adipalguna , I., & Suarjaya , A. (2017). The Influence Liquidity , Solvency , Activity , Profitability , and Market Valuation of Lq45 Company Share Prices on the IDX. E- Journal Udayana University Management , 5(12), 7638–7668.
2) Agustin, & , Dwiyani Sudaryanti, A. (2021). THE EFFECT OF GOOD CORPORATE GOVERNANCE, PROFITABILITY, AND CAPITAL STRUCTURE ON INVESTOR REACTIONS DURING THE PANDEMIC (A Study of Manufacturing Companies Listed on the Indonesia Stock Exchange). E- Jra , 10(06), 129–141. http://www.riset.unisma.ac.id/index.php/jra/article/view/10849/8505
3) Ananda, NA (2017). The Influence Profitability and Capital Structure on Firm Value. Indonesian Journal of Economics and Business, 2(1), 25–31. https://doi.org/10.37673/jebi.v2i1.50
4) Annavianti Listyanti, Ekonomi, F., & Diponegoro , U. (2011). Corporate Social Responsibility to Reaction Investors: A Study of Manufacturing Companies Listed on the Indonesia Stock Exchange 2008-2009 .
5) Ang, Robert. 1997. Smart Book on the Indonesian Capital Market. Mediasoft Indonesia: Jakarta
6) Astuti, SB, Damayanti, A., Chasbiandani , T., & Rizal, N. (2021). The Covid-19 pandemic in Presentation Reporting Finance and Business Continuity through Prediction Bankruptcy . AFRE (Accounting and Financial Review), 3(2), 165–171. https://doi.org/10.26905/afr.v3i2.5451
7) Brigham F. Eugene and Houston, Joel. (2010). Fundamentals of Management Finance : Essentials Of Financial Management. Jakarta: Salemba Four . [Accessed March 17, 2022].
8) Cahyadi, CA, Martono, C., & Prabowo, FXAJW (2018). THE EFFECT OF POSITIVE AND NEGATIVE INFORMATION ON BULLISH AND BEARISH MARKET CONDITIONS ON STOCK RETURNS (Empirical Study of Companies Listed on the Indonesia Stock Exchange) . Journal Student Management Science , 6(2), 85–98.
9) Achievements of the Indonesian Capital Market in 2021 (kompas.com)
10) Dunford, M. and Qi, B. (2020) 'Global reset: COVID-19, systemic rivalry and the global order', Research in Globalization. Elsevier, 2, p. 100021. doi : 10.1016/j.resglo.2020.100021.

11) Fadly, SR (2021). DJKN ARTICLE. 1, 24. Indonesian Capital Market Activities in the Pandemic Era (kemenkeu.go.id)
12) Fitriati, IR (2010). Analysis The Relationship between Distress Risk, Firm Size, and Book to Market Ratio with Stock Returns. In Journal of Management (Vol. 2, Issue 4).
13) Foster, George. "Financial Statement Analysis 2 nd edition, New Jersey: Prentice-Hall, 1986
14) Ghozali , I. (2021). Application Multivariate Analysis . Semarang: Diponegoro University, Semarang
15) Hadinata , H. (2020). JCI falls in due to corona, MAMI is sure price will rise again . https://investasi.kontan.co.id/news/ihs g- down - in - due - to -corona-mami- sure - prices - will -rise- again [Accessed on March 17, 2022].
16) Haryanto. (2020). The Impact of Covid-19 on Movement of the Rupiah Exchange Rate and the Jakarta Composite Index (JCI). Journal Development Planning : The Indonesian Journal of Development Planning, IV (2), 151–165. [Accessed on March 17, 2022].
17) Healy, P., Palepu, K. 2001. "A review of the empirical disclosure literature". J. Accounts. Econ. 31: 405-440.
18) Hong, H. (2016) 'Information Cascade and Share Market Volatility: A Chinese Perspective', The Journal of Asian Finance, Economics and Business, 3(4), pp. 17– 24. doi : 10.13106/jafeb.2016.vol3.no4.17. [Accessed March 17, 2022].
19) Kaplanski, G. and Levy, H. (2010) 'Sentiment and stock prices: The case of aviation disasters', Journal of Financial Economics. Elsevier, 95(2), pp. 174–201. doi : 10.1016/j.jfineco.2009.10.002. [Accessed March 17, 2022]
20) Laras, AS, & Tjahjono , A. (2021). ANALYSIS OF FUNDAMENTAL FACTORS INFLUENCING STOCK LIQUIDITY USING TRADING VOLUME ACTIVITY IN BANKING COMPANIES LISTED IN THE INFOBANK 15 INDEX ON THE INDONESIA STOCK EXCHANGE 2015-2018 PERIOD. Journal of Accounting and Business Research Indonesia . doi:https ://doi.org/10.32477/jrabi.v1i2.381
21) Lev, B., Li, S., & Sougiannis, T . (2010). "The usefulness of accounting estimates for predicting cash flow and earnings". Review of Accounting Studies 15(4): 779-807.
22) Liu, HaiYue et al. (2020) 'The COVID-19 Outbreak and Affected Countries Stock Markets Response', International Journal of Environmental Research and Public Health. Multidisciplinary Digital Publishing Institute, 17(8), p. 2800. doi : 10.3390/ijerph17082800. [Accessed March 17, 2022]
23) Listyanti , A. Ekonomi, F., & Diponegoro , U. (2011). Corporate Social Responsibility to Reaction Investors: A Study of Manufacturing Companies Listed on the Indonesia Stock Exchange 2008-2009 .
24) Malintan , Rio. (2013). The Effect of Current Ratio (CR), Debt to Equity Ratio (DER), Price Earning Ratio (PER), and Return on Assets (ROA) on Stock Returns of Mining Companies Listed on the Indonesia Stock Exchange in 2005-2010. Journal Business and Accounting , 10(2):1-25. [Accessed March 17, 2022].
25) Malikova, O. & Brabec, Z. (2012). "The influence of a different accounting system on the informative value of selected financial ratios", Technological and Economic Development of Economy, 18(1): 149-163.
26) Mahfudhoh , N., & Asyik , NF (2016). The Influence Income Smoothing and Financial Ratios to Market Reaction . Journal Accounting Science and Research, 5(11), 1–16. http://jurnalmahasiswa.stiesia.ac.id/index.php/jira/article/view/2470/2473
27) Minister of Health: Pharmaceutical Industry Remains Grow During the Covid-19 Pandemic - Liputan6.com Business
28) Muharramah , R., & Hakim, MZ (2021). The Influence Company Size , Leverage, and Profitability On Firm Value. 5(7), 569–576. https://doi.org/10.32528/psneb.v0i0.5210
29) Narulita, S. (2006). THE EFFECT OF EARNING PER SHARE, PRICE EARNING RATIO, AND PRICE BOOK VALUE ON STOCK TRADING VOLUME ACTIVITY (Study on Jakarta Islamic Index Shares 2000-2004). Journal Accounting . Taken return from http://eprints.umm.ac.id/id/eprint/12842
30) Nurviyanti , SW (2010). The Influence information ratio market value and profitability on trading volume activity in the company LQ 45 index on the Indonesian Stock Exchange . Journal Accounting . Taken return from http://repository.um.ac.id/id/eprint/36157
31) Oktaryani , GAS, Abdurrazak, A., & Negara, IK (2021). The Influence Ratio Finance Against the Value of Companies Included in the Kompas100 Index . Jmm Unram - Master of Management Journal, 10(3), 160–174. https://doi.org/10.29303/jmm.v10i3.663
32) Permatasari , BA (2017, October). THE EFFECT OF FINANCIAL PERFORMANCE AND INTEREST RATE LEVELS ON MARKET REACTION. Journal Accounting Science and Research, 6.
33) Putri, RA, & Christiawan , YJ (2014). The Influence Profitability , Liquidity , and Leverage against disclosure of Corporate Social Responsibility. Business Accounting Review, 2(1), 2014.
34) Influence The Impact of the Covid-19 Pandemic on the Indonesian Capital Market | kumparan.com

35) Prabandari , KR, & Suryanawa, K. (2014). The Influence of Environmental Performance on Investor Reactions in High-Profile Companies on the Indonesia Stock Exchange . E- Journal Udayana University Accounting , 7(2), 299–312.
36) Rachman, T. (2018). Angewandte Chemie International Edition, 6(11), 951–952., 10–27.
37) Ramli, R. (2014). FACTORS INFLUENCING THE LEVEL OF STOCK LIQUIDITY IN LQ 45 COMPANIES LISTED ON THE IDX. Journal Accounting . Taken return from http://repository.uin-suska.ac.id/id/eprint/4972
38) Raharjaputra , HS (2009). Management finance and accounting : for executive company . Jakarta: Salemba Four . [Accessed March 17, 2022].
39) Rahmawati, S. (2020). ANALYSIS OF THE EFFECT OF ROA, ROE, EPS, AND PBV ON ABNORMAL RETURN AND TRADING VOLUME ACTIVITY OF STOCK LISTED ON THE JAKARTA ISLAMIC INDEX (JII) IN THE PERIOD AROUND THE UNITED STATES-CHINA TRADE WAR, 15(2).
40) Raprayogha , R. (2020). Analysis The Effect of Return on Equity and Price Earning Ratio on Price to Book Value in Manufacturing Companies On the Indonesia Stock Exchange . Study of Scientific and Behavioral Management (SSBM), 1(8), 109–127.
41) Rosida, A. (2015). THE EFFECT OF FINANCIAL PERFORMANCE AND COMPANY SIZE ON INVESTOR REACTION. Journal Accounting Science and Research, 4.
42) Sahbandi , J. (2019). The influence of corporate social responsibility (CSR) on performance finance company to company banking (pp. 9–38).
43) Said, AL (2018). The Influence Disclosure of Corporate Social Responsibility Regarding Company Values With Profitability As Intervening Variables (Survey on Property and Real Estate Sub-Sector Service Companies Listed on the Indonesia Stock Exchange for the 2014-2018 Period). Angewandte Chemie International Edition, 6(11), 951–952., 2013–2015.
44) Sakti, NW (2020). The Indonesian Economy Post-Covid-19 Pandemic . https://money.kompas.com/read/2020/05/10/091500226/ekonomi - indonesia -pasca pandemic -covid- 19?page=all [Accessed on March 17, 2022].
45) Sari, L. (2017). The Influence Profitability , Leverage, and Corporate Social Responsibility (CSR) Against Investor Reaction . [Accessed March 17, 2022].
46) Sawir , Agnes, (2009), Financial Performance Analysis and Planning Corporate Finance , PT. Gramedia Pustaka Utama, Jakarta. [Accessed on March 17, 2022].
47) Simamora , H. (2000). Accounting : The Basis for Decision Making . Volume Two, 2nd Edition First . Jakarta: Salemba Four . [Accessed March 17, 2022].
48) Spence, M. 1973. Job Market Signaling. The Quarterly Journal of Economics.
49) Sudana , IM (2011). Management Corporate Finance: Theory & Practice . Jakarta: Publisher Erlangga . [Accessed on March 17, 2022].
50) SULIS SETYOWATI. (2016). THE EFFECT OF INVESTMENT DECISIONS, FUNDING DECISIONS, DIVIDEND POLICY AND PROFITABILITY LEVEL ON COMPANY VALUE (Empirical Study on Non- Manufacturing Companies Listed on the Indonesia Stock Exchange 2011-2013 Period) (pp. 1–19).
51) Tandelilin , Eduardus. (2010). Portfolio and Investment Theory and Application . Yogyakarta: Kanisius . [Accessed March 17, 2022].
52) Verawaty , V., Jaya, AK, & Mendala , T. (2015). The Influence of Financial Performance On Stock Returns in Mining Companies Listed on the Indonesia Stock Exchange . Journal Accounting , 11(2), 75–87.
53) Wiagustini, Luh Putu. (2014). Basics Management Finance . Denpasar: Udayana University Press. [Accessed March 17, 2022].
54) Wiagustini, Ni Luh Putu. (2010). Fundamentals of Management Finance. Denpasar: Udayana University Press. [Accessed March 17, 2022].
55) Widayanto , Wiwit and Sunarjanto . (2005). Analysis Influence Announcement Stock Split Impact on Stock Price, Stock Trading Volume and Stock Liquidity Measured with Bid-ask Spreads in Several Publicly Listed Companies on the Jakarta Stock Exchange . Focus Managerial , 3(2): 154-164. [Accessed on March 17, 2022].
56) Wismar'ein , Dian, 2004, " Market Reaction to Rights Issue Announcement on Abnormal Return and Stock Liquidity (Case Study on the Jakarta Stock Exchange) ", Postgraduate Thesis of Master of Management Program, Diponegoro University (Unpublished). [Accessed on March 17, 2022].

57) Zulkarnaen, W., Erfiansyah , E., Amin, NN, & Leonandri , DG (2020). Comparative Study of Tax Policy Related to COVID-19 in ASEAN Countries. Test Engineering and Management Journal, 10(June), 6519–6528. https://www.researchgate.net/publication/341495765

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