

# Economics and Business Quarterly Reviews

**Sarjono, Eko, Titisari, Kartika Hendra, and Pawenang, Supawi. (2021), Effects of Infrastructure Development, Inflation and Economic Growth to Performance Company (ROA, Tobin's Q, PBV): Study on Registered Infrastructure Support Companies in IDX Period 2014-2019. In: *Economics and Business Quarterly Reviews*, Vol.4, No.3, 192-199.**

ISSN 2775-9237

DOI: 10.31014/aior.1992.04.03.382

The online version of this article can be found at:

<https://www.asianinstituteofresearch.org/>

Published by:  
The Asian Institute of Research

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# Effects of Infrastructure Development, Inflation and Economic Growth to Performance Company (ROA, Tobin's Q, PBV): Study on Registered Infrastructure Support Companies in IDX Period 2014-2019

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## Abstract

The financial performance can be used as a benchmark of the ability of an organization or company in achieving its goals. Performance measurement is one of the most important factors for an organization or company, performance measurement is a process of measuring the extent to which a company does work to achieve its goals. The research investigated the impact of infrastructure, economic growth and inflation on financial performance of infrastructure support companies listed in Indonesian Stock Exchange Period 2014-2019 which is proxied by ROA (Return on Assets), Tobin's Q and PBV (Price to Book Value). The population of this research was the infrastructure support companies listed on the Indonesian Stock Exchange period 2014-2019. Research sampling was conducted using The Purposive Sampling Method. The data analysis was carried out using classical assumption test, multiple linear regression analysis, t-test, F-test and determinan (R<sup>2</sup>) test with SPSS 21. The research finding showed that the model has an effect on the financial performance as proxied by ROA. So the results of the hypothesis test show that: (1) Infrastructure development has a negative and significant effect on ROA. (2) The inflation rate has a positive and significant effect on ROA. (3) Economic growth has no significant effect on ROA. Meanwhile, the model has no effect on financial performance which is proxied in Tobin's Q and PBV.

**Keywords:** Infrastructure, Economic Growth, Inflation, ROA (Return on Assets), Tobin's Q, PBV (Price to Book Value)

## 1. Introduction

The company's performance is an essential part of measuring its success because it is the first thing an investor will see. The company's performance is a complete display of the company's state over a while, is the result or achievement that is influenced by the company's operational activities in utilizing the resources owned

(Srimindarti, 2004). The performance of a company can also be seen from how much profit the company earns. Corporate profits are an indicator of the company's fulfilling its obligations for funders and are one of the elements in creating company value that shows the company's prospects in the future (Veronica & Wardoyo, 2013). One of the proxies used in measuring a company's performance is Return on Assets (ROA) (Ahmad & Zabri, 2016). ROA reflects the company's ability to generate profits for its shareholders by utilizing assets owned by the company (Herli & Hafidhah, 2017). In addition, the company's performance can also be projected in Tobin's Q and PBV (Price to Book Value).

Sales growth is the most crucial part of the company's performance assessment. Generally, the higher the sales growth rate indicates that the higher the level of profitability obtained by the company. The high level of profitability of the company indicates the company's increasingly better performance.

Since 2015, the government has shifted subsidy spending to productive spending, namely infrastructure development, health, and education. The infrastructure budget continues to increase from Rp 269 trillion in 2016 to around Rp 415 trillion in 2019 (figure 1).

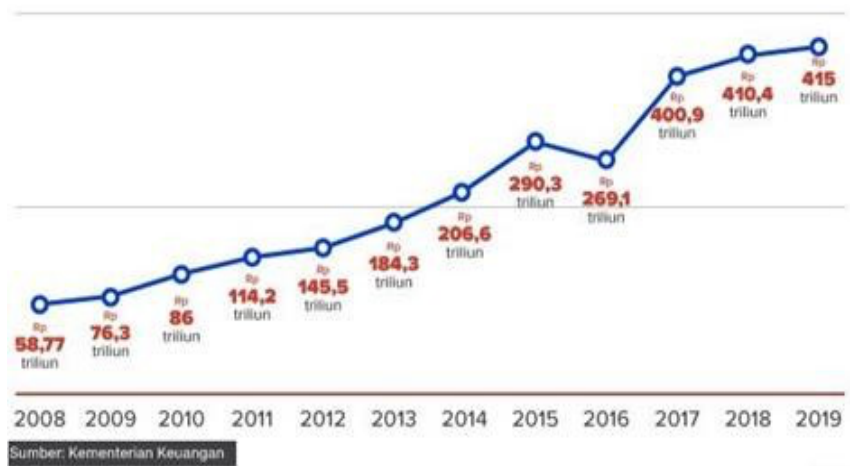


Figure 1. Government Infrastructure Budget 2008-2019

Infrastructure development is currently one of the main concerns of the Indonesian government. The increase in development projects throughout Indonesia will require cement companies to increase their production capacity and performance. This is reflected in the increase in cement sales volume from 48 million tons in 2011 to 62 million tons in 2016.

The Ministry of PUPR, through the Directorate General of Bina Marga has completed the construction of a national road along 3,432 km, including roads on the borders of Papua, Kalimantan, and NTT. Then a new toll road was built along 941 km with a target of the end of 2019 reaching 1,852 km. In support of water and food security, the target of building 65 dams, in 2018 as many as 8 dams have been completed, namely Paya Seunara and Rajui Dams in Aceh, Jatigede in West Java, Bajulmati and Nipah Jatim, Titab in Bali, Barnacle in Balikpapan, Raknamo and Tanju in NTB. The other dam will be completed gradually until 2023. The construction of 65 dams will add reservoir irrigation services by 160,000 hectares, industrial capacity of 2.11 billion m<sup>3</sup>, raw water is available as much as 3.02 m<sup>3</sup> / second and produces energy potential of 145 MW.

Infrastructure development that continues to be launched by the government is expected to positively impact Indonesia's economic growth, increasing investment and increasing state foreign exchange through tourism is increasingly wide open with the improvement and support of the development of physical infrastructure of a region. The existence of adequate infrastructure will contribute to the smooth production and distribution of goods and services that can increase economic growth and economic equality. The existence of infrastructure development will undoubtedly encourage foreign and domestic investors, long-term investors and momentum investors to invest in Indonesia.

Some previous research became the basis of hypothesis making in this study, among others, hypothesis 1. Infrastructure development affects the company's performance. Daryanto (2018) researched that Indonesia's increasing infrastructure development projects will require cement companies to increase their production capacity and performance. This is reflected in the increase in cement sales volume from 48 million tons in 2011 to 62 million tons in 2016. Cement consumption in Indonesia continues to grow, even predicted to overgrow in the coming period and development in Indonesia planned by the government. The running of infrastructure projects followed by increasingly efficient production is believed to encourage the cement business.

Research in Prague, Czech Republic conducted by Palei (2015), examined the extent of the influence of infrastructure on national competitiveness. Research through the effectiveness of infrastructure management can improve industrial policies and gain national competitiveness. Paul (2004) examined the influence of public infrastructure on the productive performance of 12 manufacturing industries in Canada. This research shows that public infrastructure has an important role in the productivity of the manufacturing industry.

Another researcher is Bhanawat (2018), a selected cement company in India with research results showing infrastructure development and construction affect financial performance and vice versa. Infrastructure development resulted in high demand for cement which increased the cement industry's composite stock index. The corresponding research is conducted by (Bulqiah et al., 2020), which claims that government infrastructure spending affects stock prices. This means that the more government spending on the infrastructure sector, the more the stock price increases.

For Hypothesis 2, Inflation affects the performance of companies in line with Paul and Theodore's research (2012), research aims to find out the relationship between stock returns and Inflation in countries that are members of the G7. The results stated that Inflation has a positive and significant influence on stock returns. Another researcher, Kumar et al (2015), aims to find out the relationship between stock returns and Inflation. The results stated that Inflation has a positive and significant influence on stock returns.

Hypothesis 3, Economic growth affects the performance of the company. Research conducted by Egbunike and Okerekeoti (2018) in Nigeria examined the interrelationship between macroeconomic factors, corporate characteristics and the financial performance of manufacturing companies in Nigeria. The results showed economic growth had a significant influence on the company's characteristics including profitability, leverage and liquidity. Ramiz et al. (2014), examined the relationship between a company's performance, macro-economic variables, and company size. The analysis was conducted over 12 years, for seven non-financial sectors of Pakistan's economy, taking into account the emerging economy. The results showed that macroeconomic variables, including economic growth affected a company's performance. Other researchers Lim and Rice (2016), analyzed the influence of current ratio, inventory turnover, leverage, earning power, net profit margin, sales rate, inflation rate and economic growth on profit growth. Economic growth simultaneously affects the growth of corporate profits.

## 2. Research Method

This form of research is categorized as quantitative research with descriptive statistics. The population used in the study is an infrastructure development support company consisting of 44 (forty-three) companies listed on the Indonesia Stock Exchange in 2014-2019. Variables to be examined in the study include Return on Asset (ROA), Tobin's Q, and Price to Book Value (PBV). Roa and PBV data are obtained directly from the annual reports of each selected company. As for Tobin's Q, data processing is done using the help of Microsoft Excel. The data that will be studied consists of 44 companies in 6 periods so that the sample population is 264.

Data obtained from the Indonesia Stock Exchange (IDX) is from [www.IDX.co.id](http://www.IDX.co.id) and [www.lembarsaham.com](http://www.lembarsaham.com). Data processing analysis methods using multiple regression analysis to test hypotheses. The regression process will be done with SPSS 21 software.

Infrastructure support companies listed on the Indonesia Stock Exchange for the period 2014-2016 that report annual financial statements are:

Table 1: Infrastructure Support Companies

No	Code	Emit	IPO
<b>Cement Company</b>			
1	INTP	Indocement Tunggul Prakasa Tbk	10-Dec-89
2	SMBR	Semen Baturaja Tbk	28-Jun-13
3	SMCB	Holcim Indonesia Tbk	10-Agu-97
4	SMGR	Semen Indonesia Tbk	08-Jul-91
5	WTON	Wijaya Karya Beton Tbk	20-Sep-16
6	WSBP	Waskita Beton Precast Tbk	08-Apr-14
<b>Steel and Metal Company</b>			
1	ALKA	Alakasa Industrindo Tbk	12-Jul-90
2	ALMI	Alumindo Light Metal Industry Tbk	02-Jan-97
3	BAJA	Saranacentral Bajatama Tbk	21-Dec-11
4	BTON	Betonjaya Manunggal Tbk	18-Jul-01
5	CTBN	Citra Tubindo Tbk	28-Nop-1989
6	GDST	Gunawan Dianjaya Steel Tbk	23-Dec-09
7	INAI	Indal Aluminium Industry Tbk	05-Dec-94
8	ISSP	Steel Pipe Industry of Indonesia Tbk	22-Feb-13
9	JKSW	Jakarta Kyoei Steel Works Tbk	06-Agu-97
10	KRAS	Krakatau Steel Tbk	10-Nop-2010
11	LION	Lion Metal Works Tbk	20-Agu-93
12	TBMS	Tembaga Mulia Semanan Tbk	30-Sep-93
13	PICO	Pelangi Indah Canindo Tbk	23-Sep-96
<b>Construction &amp; Building Industry Company</b>			
1	ADHI	Adhi Karya Tbk	18-Mar-04
2	BKDP	Bukit Darmo Property Tbk	
3	CSIS	Cahayasakti Investindo Sukses Tbk	10-Mei-17
4	DGIK	Nusa Konstruksi Enjiniring Tbk	19-Dec-07
5	IDPR	Indonesia Pondasi Raya Tbk	10-Dec-15
6	JKON	Jaya Konstruksi Manggala Pratama Tbk	
7	MTRA	Mitra Pemuda Tbk	10-Feb-16
8	NRCA	Nusa Raya Cipta Tbk	27-Jun-13
9	PBSA	Paramita Bangun Sarana Tbk	28-Sep-16
10	PTPP	Pembangunan Perumahan(Persero) Tbk	09-Feb-10
11	SSIA	Surya Semesta Internusa Tbk	27-Mar-97
12	TOPS	Totalindo Eka Persada Tbk	16-Jun-17
13	TOTL	Total Bangun Persada Tbk	25-Jul-06
14	WEGE	Wijaya Karya Bangunan Gedung Tbk	30-Nop-2017
15	WIKA	Wijaya Karya (Persero) Tbk	29-Okt-07
16	WSKT	Waskita Karya (Persero) Tbk	19-Dec-12
<b>Machinery Industry Company &amp; Heavy Equipment</b>			
1	AMIN	Atelier Mecaniques D'Indonesie Tbk	10-Dec-15
2	GMFI	Garuda Maintenance Facility Aero Tbk	10-Okt-17
3	KPAL	Steadfast Marine Tbk	08-Jun-18
4	KRAH	Grand Kartech Tbk	08-Nov-13
<b>Cable Industry Companies</b>			
1	IKBI	Sumi Indo Kabel Tbk	21-Jan-91
2	JECC	Jembo Cable Company Tbk	18-Nov-92
3	KBLI	KMI Wire and Cable Tbk	06-Jul-92
4	KBLM	Kabelindo Murni Tbk	01-Jun-92
5	VOKS	Voksel Elektrk Tbk	20-Dec-90

### 3. Results

Before the multiple linear regression test has been done the classical assumption test but for the tobin and pbv variables do not meet the classical assumption criteria. So in this study will discuss the regression model with ROA as the dependent variable.

Table 2. Result

Variabel	Model 1			Model 2			Model 3		
	Koef.	t <sub>hitung</sub>	Sig.	Koef.	t <sub>hitung</sub>	Sig.	Koef.	t <sub>hitung</sub>	Sig.
Constant	112.889								
Infastruktur	-0.513	-4.063	0.000	-	-	-	-	-	-
Inflasi	0.717	3.562	0.000	-	-	-	-	-	-
⊕ Pertumbuhan Ekonomi	-1.557	-0.975	0.331	-					
f <sub>hitung</sub>	5.490		0,001	1.447		0.229	0.369		0,776
R	0.244a			0.128a			0.065a		
R Square	0.060			0.016			0.004		
Ad. R Square	0.049			0.005			-0.007		
Durbin Watson	1.713			1.791			1.934		

*Dependent Variabel: ROA Model 1*

*Dependent Variabel: Tobin Model 2*

*Dependent Variabel: PBV Model 3*

*Sumber: Hasil Analisis Regresi, Lampiran 5*

From table 2 can be obtained the regression equation model as follows:

$$Y = 112.889 - 0.513X_1 + 0.717X_2 - 1.557X_3$$

1. Constant (a) of 112.889; This means that if the value of Infastructural (X1), Inflation (X2) and Economic Growth (X3) value is 0, then the performance / ROA of the company (Y) the value is 112,889.
2. Infastructural variable regression coefficient (X1) of -0.513; This means that if other independent variables of fixed value and Infrastructure (X1) increase by 1%, then the company's performance / ROA (Y) will increase by -0.513.
3. Inflation variable regression coefficient (X2) of 0.717; this means that if other independent variables of fixed value and Inflation (X2) increase by 1%, then the company's performance / ROA (Y) will increase by 0.717
4. Economic Growth variable regression coefficient (X3) of -1,557; This means that if other independent variables of fixed value and Economic Growth (X3) increase by 1%, then the company's ROA performance (Y) will increase by -1,557.

#### 3.1. Goodness of Fit Test

The F test is used to determine whether independent variables together (simultaneously) have a significant effect on dependent variables. The test results of the influence of variables in infrastructure, inflation and economic growth simultaneously on the performance / ROA of the company can be seen in the SPSS output table above. The table above shows that the f score numeral value of 5,409 f score results are consulted with ftable with a significance level of 5% (0.05). This indicates that f calculates the > f of the table (5,409 > 2,639) and the degree of significance of the Sig value. 0.001 < 0.05 is smaller than 0.05. So it can be concluded that Ho was rejected and Ha accepted, meaning that there is a significant influence between infrastructure variables, inflation and economic growth simultaneously on ROA (company performance). These results are in line with research (Zulfiqar & Din, 2015), which found that simultaneously inflation and interest rates positively influence a company's value as measured by ROA (Return on Assets).

### 3.2. *T test*

The t test is used to determine whether independent variables partially affect dependent variables. In this test using a sample of  $n = 264$  and the number of variables  $k = 4$  with a two-way test so that the significant number of 2 sides is 0.025, then  $(df = n-k)$  so that the df value of  $264 - 4 = 260$

#### 3.2.1. Based on Significance Value (Sig.)

Based on the table above, the value of significance (Sig.) of infrastructure variables (X1), inflation (X2) and economic growth (X3) is 0.000; 0,000 and 0.331. Because of sig value.  $0.000 ; 0,000 < \text{probability of } 0.05$ , it can be concluded that  $H_a$  is accepted means that infrastructure variables and inflation significantly affect ROA (company performance). While the value of economic growth significance (X3)  $> \text{probability of } 0.05$ , economic growth has no significant effect on ROA.

#### 3.2.2. Comparison Of Value T Score With T Table

**a) The influence of infrastructure on ROA (company performance).**

Based on the table above, the t score value of -4.063 shows that the value of t score  $>$  t table 3,182 can be concluded  $H_0$  rejected and  $H_a$  accepted. This means that infrastructure variables partially have a significant negative influence on ROA (company performance).

**b) The Effect of Inflation on ROA (company performance).**

Based on the table above can be obtained t score value of 3,277. This indicates that the value of t score  $>$  t table 3,562 shows that  $H_0$  was rejected and  $H_a$  was accepted. This means that partial inflation variables have a significant positive influence on ROA (company performance). This study is different from previous studies (Anugrah et al., 2020) and (Olalere et al., 2017). The results explained that inflation has no partial and simultaneous influence on profitability.

**c) The Effect of Economic Growth on ROA (company performance).**

Based on the table above can be obtained t score value of -0.975. This indicates that the value of t score  $<$  t table 3,182 shows that  $H_0$  was accepted and  $H_a$  was rejected. This means that partial economic growth variables do not have a significant effect on the performance / ROA of the company. This research is supported by research (Anugrah et al., 2020). The results explained that economic growth has no partial effect on profitability. Olalere et al., (2017) under "Bank Specific and Macroeconomic Determinants of Commercial Bank Profitability: Empirical Evidence from Nigeria." The results showed that economic growth did not influence profitability as measured by ROA (Return on Assets).

### 3.3. *Coefficient of Determination*

Table 2 obtained the number  $R^2$  (R Square) of 0.060 or (6%). This indicates that the percentage of the contribution of independent variables (Infrastructure, Inflation and Economic Growth) on dependent variables (Performance / ROA of the Company) by 6%. Or the variation of independent variables used in the model (Infrastructure, Inflation and Economic Growth) can explain the 6% variation of the ROA dependent variable (company performance). The remaining 94% were affected or explained by other variables not included in the study model.

## 4. Discussion

### 4.1. *The effect of infrastructure development on the company's performance*

The test results as presented in table 2 show that infrastructure development has a significant negative effect on the company's performance (ROA), so it can be concluded that the higher government spending in infrastructure, the ROA will fall. Conversely, the lower government spending in infrastructure, roa will rise. In the opinion of researchers, this is possible because:

1. Infrastructure development carried out by the Indonesian government in the procurement process using the auction/tender mechanism so that with the auction process creates a perfect competition market where construction providers will try to offer the lowest price, so that the continued effect is likely to affect the opportunities of supporting companies in the performance of generating turnover and profit.
2. The sample studied is a supporting company, both a material provider company and an infrastructure development service provider. The researcher's hypothesis focuses on the opportunity for these companies to absorb the infrastructure budget into turnover and profits, but the results show that government infrastructure development activities actually have a significant negative effect, this means that government infrastructure development activities may have a positive effect on the performance of other companies whose business processes are not related to infrastructure development but are very dependent on infrastructure development. The availability of reliable infrastructure.

This research is different from research conducted by (Kasper, 2015), stating that infrastructure development has no effect on the value of the company as measured by ROA (Return of Assets), because the company's performance is influenced by several variables such as company characteristic variables, state characteristic variables and regulatory and competition variables (sector characteristic variables).

#### 4.2. Effect of inflation on a company's performance

The test results as presented in table 2 show that inflation has a significant positive effect on the company's performance, meaning that inflation has a positive relationship to ROA, so that the company's performance as an implementation of the company's fundamentals is affected by inflation. This is because stable inflation and low tends to increase company sales, which ultimately results in the company's profit increases. Increased profitability of the company increases the value of the company. So it can be concluded that inflation becomes an essential factor in investors' consideration in making investments. Therefore, investors can make inflation as a reference in assessing the company's outlook.

This research supports several studies conducted by (Khan et al., 2014), (Zulfiqar & Din, 2015) (Vätavu, 2015) which stated that Inflation has a positive influence on the value of companies as measured by ROA (Return on Assets). However, this study does not support research conducted by (Ojalere et al., 2017) which states that Inflation does not affect profitability.

#### 4.3. Economic growth on the performance of the company

The results of tests, such as presented in table 4 show that economic growth has no significant effect on the performance of the company, it is possible to increase people's purchasing power to encourage people to consume goods and services but not followed by the desire to invest in the capital market. This research is in line with research conducted by (Anugrah et al., 2020) which proves that economic growth does not affect profitability as measured by ROA (Return on Assets).

The determination coefficient (R<sup>2</sup>) analysis for ROA of 6% informs that many other variables affect the company's performance, namely by 94% that are not studied.

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