

# The effect of DER, EPS, ROE and inflation on stock returns in the construction, property and real estate companies

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## Abstract

**Purpose:** The study aims to assess the impact of financial indicators Debt to Equity Ratio (DER), Earnings Per Share (EPS), Return on Equity (ROE), and inflation on stock returns of construction, property, and real estate companies from 2015 to 2019 and categorize these companies by market capitalization (medium and small).

**Method:** The research uses a descriptive quantitative approach with panel data regression analysis in Eviews 11 to examine variable relationships for 49 companies over five years, utilizing 245 data points from IDX.co.id and idnfinancials.com. To evaluate the significance of the results, T-tests were performed for hypothesis testing.

**Findings:** EPS and ROE positively and significantly affect stock returns for medium-market capitalization companies, while DER and inflation do not. Conversely, for small-market capitalization companies, none of the indicators significantly influence stock returns.

**Practical implications:** Medium-market capitalization firms should enhance their EPS and ROE to boost stock returns, while small-market capitalization companies require further research to identify additional influencing factors. Policymakers need to recognize the unique challenges across different market capitalization categories.

**Keywords:** Stock Return, DER, EPS, ROE, Inflation, Market Capitalization

**Paper type:** Research paper

## ARTICLE INFO:

Received 7/9/2024

Revised 12/20/2024

Accepted 1/1/2025

Online First 2/25/2025

Asian Journal of Corporate  
Governance and Financial  
Performance

Vol 1, No.1, 2025, 37-48

pISSN XXXX-XXXX

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**Abstrak**

**Tujuan:** Penelitian ini bertujuan untuk menilai dampak indikator keuangan DER, EPS, ROE, dan inflasi terhadap imbal hasil saham perusahaan konstruksi, properti, dan real estat dari tahun 2015 hingga 2019, serta mengkategorikan perusahaan-perusahaan ini berdasarkan kapitalisasi pasar (menengah dan kecil).

**Metode:** Penelitian ini menggunakan pendekatan kuantitatif deskriptif dengan analisis regresi data panel menggunakan Eviews 11 untuk mengkaji hubungan antar variabel pada 49 perusahaan selama lima tahun, dengan memanfaatkan 245 data yang diambil dari IDX.co.id dan idnfinancials.com. Uji-T dilakukan untuk pengujian hipotesis guna menilai signifikansi hasil penelitian.

**Temuan:** EPS dan ROE memberikan dampak positif dan signifikan terhadap imbal hasil saham untuk perusahaan dengan kapitalisasi pasar menengah, sementara DER dan inflasi tidak berpengaruh. Sebaliknya, untuk perusahaan dengan kapitalisasi pasar kecil, tidak ada indikator yang secara signifikan mempengaruhi imbal hasil saham.

**Implikasi Praktis:** Perusahaan dengan kapitalisasi pasar menengah harus meningkatkan EPS dan ROE mereka untuk mendorong imbal hasil saham, sementara perusahaan dengan kapitalisasi pasar kecil memerlukan penelitian lebih lanjut untuk mengidentifikasi faktor-faktor pengaruh tambahan. Pembuat kebijakan perlu menyadari tantangan unik di berbagai kategori kapitalisasi pasar.

**Kata Kunci:** Return Saham, DER, EPS, ROE, Inflasi, Kapitalisasi Pasar

**1. Introduction**

The capital market is often defined as a place that brings together those who need funds and those who will save funds. According to Law No. 8 of 1995, the meaning of the capital market is an activity related to securities trading and public offerings, public companies related to securities issued, as well as institutions and professions related to securities. In the capital market, various kinds of instruments to invest, including stocks. Stock is a very popular instrument in society. Shares are derived from an issue when it is decided as required funds.

In the world of stocks, something is undoubtedly expected from the ownership of these shares. Stock return is the expected return; the higher the company's performance, the higher the stock price is expected, which benefits investors. Shares have two advantages for their owners: dividends and capital gains. In addition to profits, stocks carry considerable risk compared to other capital market instruments. The risk is in the form of capital loss, and even worse is the risk of liquidation.

Stocks listed on the Indonesia Stock Exchange (IDX) have nine sectors, namely the primary sector (agriculture and mining), the secondary sector (elemental and chemical industry, various industries, consumer goods industry), and the tertiary sector (property and real estate, transportation and infrastructure), finance, trade, services and investment). One of the sectors that will be investigated in this research is the construction, property, and real estate sector. This sector is considered one of the leading sectors of President Joko Widodo, who is very aggressive in national development.

Infrastructure is an essential foundation for a country, and it will also affect the surrounding housing, which involves the property sector.

The property sector's growth is susceptible to macroeconomic indicators: economic growth, inflation rates, interest rates, and the rupiah exchange rate. This property development project also creates many jobs and drives various other industries. The property and construction sector is a tertiary sector and consists of 91 stocks that are incorporated in it. The weight of this sector against the JCI is 6.5%. With these weights, the industry rate with the JCI does not correlate significantly, so any increase or decrease in property and construction stocks will not considerably impact the JCI.

## 2. Theoretical background and hypothesis

### Theoretical Foundation

#### *Stock Return*

The source of investment return consists of two components: yield and capital gain/loss (Tandelilin, 2017:114). What is meant by yield is the yield received periodically, such as yield on bonds and dividends on stocks. Capital gain/loss is the difference between the purchase and selling prices. Returns can be realized returns and expected returns. Realized return is a return that has occurred and is calculated using historical data. The expected return is a return that is expected to be obtained by investors in the future, according to Hartono (2013, in Widarma and Surdjani, 2016: 3393).

In this study, stock returns are proxied, meaning that the return due to the stock price at the end of the year is reduced by the stock price at the beginning of last year; the difference is divided by the stock price at the beginning of the previous year.

#### *Stock Analysis Stock*

Investment must be preceded by analyzing the factors expected to affect stock returns. The analysis is technical and fundamental. Technical analysis is a technique for predicting the direction of stock price movements and other stock market indicators based on historical data such as price information, according to Aisyah and Mandala (2016: 6911). Fundamental analysis is a top-down analysis based on the company's fundamental factors, which are influenced by economic, industry, and company factors (Tandelilin, 2017:397).

#### *Firm Size*

Firm size, which reflects a company's scale, is often categorized as large or small based on market value, assessed through market capitalization. This is calculated by multiplying the stock market price by the number of outstanding shares. Market capitalization is divided into three categories: small companies (less than 1 trillion rupiahs), medium-sized companies (1 to 40 trillion rupiahs), and large companies (over 40 trillion rupiahs). Recognizing these classifications is crucial, as they impact a company's various operational and strategic aspects.

#### *Financial Performance*

According to Dwilita and Satrya (2018:5), financial performance is an essential indicator of a company's health. Financial statements showcase a company's achievements over a given period. Investors analyze these statements alongside various financial ratios to gauge performance, focusing on three key categories: profitability, leverage, and market value.

Profitability ratios, exemplified by return on equity (ROE), reveal how effectively a company utilizes its equity to generate profits (Aisyah and Mandala, 2016:6913). Leverage ratios, such as the debt-to-equity ratio (DER), assess the funding structure by comparing creditor financing to owner equity (Basalma et al., 2017:1795). Lastly, market value ratios, particularly earnings per share (EPS), compare net income after tax to the number of shares outstanding (Wulandani, 2017:2). Together, these ratios provide investors with a holistic understanding of a company's financial integrity and operational efficiency, facilitating informed investment choices.

### *Inflation*

According to Lindayani and Dewi (2016: 5277), inflation is defined as a process of raising prices continuously, or in other words, inflation is defined as the process of decreasing currency values. The inflation relationship has a relatively negative effect on stock prices because it is caused by the nature of inflation, which increases costs so that it suppresses a company's profit.

## **Hypothesis**

### *Effect of DER on Stock Returns*

This shows that the greater the number of assets funded by capital owners, the smaller the risk that affects the increase in stock prices for capital owners, according to Puspita (2017) in Angarini and Yusra (2019). The result is that leverage (DER) significantly affects stock returns. This ratio is sought by comparing all debt with all equity. In other words, to find out the amount of funds the borrower (creditor) provides to the company's owner, according to Basalma et al. (2017). Because there are two types of sample grouping, the hypothesis is as follows:

**H<sub>1</sub>:** DER has an effect on stock returns in construction, property and real estate sector companies with medium market capitalization.

**H<sub>5</sub>:** DER has an effect on stock returns in construction, property and real estate sector companies with small market capitalization.

### *Effect of EPS on Stock Returns*

Earnings per share (EPS) is the net profit obtained by investors per share they own; the higher the EPS value, the higher the profit per share owned by investors. This shows that earnings per share have a positive and significant effect on property and real estate stock returns, according to Yulairatih and Artini (2017). A sign is that the greater the EPS value of a company, the more interested investors are in buying company shares. Because there are two types of sample grouping, the hypothesis is as follows:

**H<sub>2</sub>:** EPS has an effect on stock returns in construction, property and real estate sector companies with medium market capitalization.

**H<sub>6</sub>:** EPS has an effect on stock returns in construction, property and real estate sector companies with small market capitalization.

### *Effect of ROE on Stock Return*

This ratio measures how much profit the company generates compared to shareholder equity. The results of the same study conducted by Komala (2013) and Aisyah and Mandala (2016) found that ROE has a positive and significant effect on stock returns. This means that the higher a company's return on equity (ROE), the higher the stock returns generated. Companies that perform well can conclude that their ROE is increasing. The

increase in ROE will also boost the company's selling value, which impacts stock prices, so this is correlated with an increase in stock returns. Because there are two types of sample grouping, the hypothesis is as follows:

**H<sub>3</sub>:** ROE has an effect on stock returns in construction, property and real estate sector companies with medium market capitalization.

**H<sub>7</sub>:** ROE has an effect on stock returns in construction, property and real estate sector companies with small market capitalization.

#### *The Effect of Inflation on Stock Returns*

Yuliaratih and Artini (2017) state that inflation tends to increase the price of products. High inflation reduces the level of real income that investors get from investing. A high inflation rate has a negative relationship to the stock return index. This agrees with the research of Kurniasari et al. (2016), who states that the inflation variable has a direct negative effect on stock returns. Because there are two types of sample grouping, the hypothesis is as follows:

**H<sub>4</sub>:** Inflation affects stock returns in companies in the construction, property and real estate sectors with medium market capitalization.

**H<sub>8</sub>:** Inflation affects stock returns in companies in the construction, property and real estate sectors with small market capitalization.

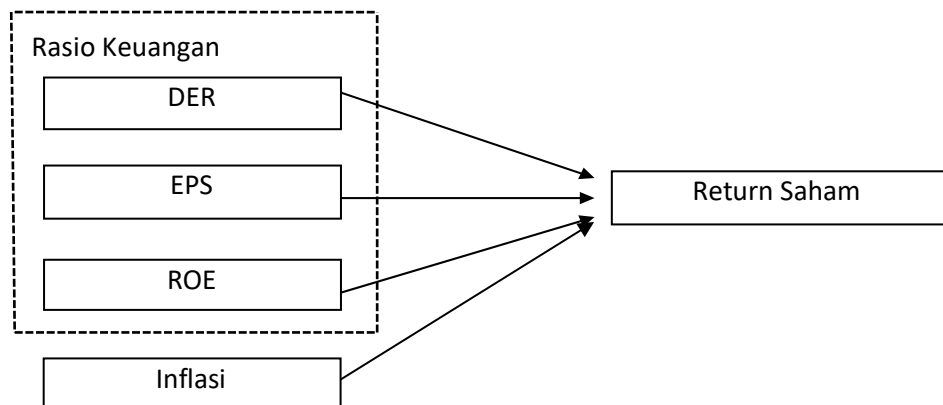


Figure 1 Conceptual Framework

## 3. Methods

### 3.1. Sampling procedure

The sampling method in this study is a purposive sampling technique, which has been carefully selected with specific characteristics relevant to the research design. The considerations used in determining the sample in this study are:

- 1) List of companies on the Indonesia Stock Exchange that meet the criteria.
- 2) The stock return rate is calculated by subtracting the closing price from the stock price during the 2015-2019 period.
- 3) The inflation data used is annual data using the consumer price index (CPI) from the Central Statistics Agency (BPS) data for 2015-2019.
- 4) The company's DER, EPS, and ROE data per year during the 2015-2019 period.

### 3.2. Operational Variables

Operationalization of variables is interpreting a concept of written variables so that they can be measured by looking at the dimensions (indicators) of the idea itself.

Table 1. Research Operational Variables

No.	Variables	Sub Variables	Indicator	Scale
1	Leverage Ratio	Debt to Equity Ratio	$\frac{\text{Debt}}{\text{Equity}}$	Percentage
2	Market Value Ratio	Earning Per Share	$\frac{\text{Net Profit After Tax}}{\text{Number of Shares}}$	Rupiah
3	Profitability Ratio	Return on Equity	$\frac{\text{Net Profit After Tax}}{\text{Shareholders' Equity}}$	Percentage
4	Inflation	Inflation	Consumer Price Index	Percentage
5	Stock Return	Stock Return	Stock Closing Price	Percentage

### 3.3. Data Analysis Methods

The research utilized a correlational strategy with a literature study approach, reviewing various sources, including books, internet resources, and journal articles. The research type was quantitative, employing panel data that combined cross-sectional and time series data. Secondary data was collected online and published in scientific journals, specifically from [www.idx.co.id](http://www.idx.co.id). The analysis utilized panel data regression to examine correlations, focusing on financial statements from 2015 to 2019 to capture yearly results. The hypothesis testing was conducted using Eviews software version 11 for data processing.

## 4. Results and discussion

### 4.1. Descriptive Statistical Analysis

The dataset's analysis reveals that 245 valid data points were processed, offering a comprehensive insight into stock market dynamics within the specified timeframe. Focusing on the dependent variable, stock returns, PT. Piko Land Development recorded the lowest stock return value of -0.85 in 2019, while PT. Indonesia Prima Property Tbk. Achieved the highest return of 4.00 in 2017. The average stock return across the sample is slightly negative at -0.02, indicating diverse performance levels among the companies analyzed.

Table 3. Descriptive Statistical Test

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Stock Return	245	-0.85	4.00	-0.02	0.41
DER	245	0.03	35.47	1.04	2.36
EPS	245	-690.54	2818.00	122.45	305.12
ROE	245	-3.97	1.08	0.06	0.28
Inflation	245	2.72	3.61	3.17	0.30
N	245				

Source: Research results

Regarding independent variables, the DER had a minimum value of 0.03 for PT. Ristia Bintang Mahkota Sejati Tbk. in 2016, compared to a maximum DER of 35.47 reported by PT. Acset Indonusa Tbk. in 2019. The average DER for the sampled companies stands at 1.04, indicating a moderate level of debt relative to equity. Additionally, EPS showed PT. Gowa Makassar Tourism Development Tbk. had the lowest EPS of -690.54 in 2019, while PT. Lippo Cikarang Tbk. Noted the highest EPS of 2818.00 in 2018, with an average EPS of 122.45 overall. The ROE reveals minimum and maximum values of -3.97 and 1.08, respectively, demonstrating an average ROE of 0.06 across companies. Lastly, the inflation rate averaged 3.17 over the period examined, with values ranging from a minimum of 2.72 in 2019 to a maximum of 3.61 in 2017.

#### 4.2. Hypotheses testing

Based on Table 4, the analysis of financial variables reveals that the DER does not significantly impact stock returns in medium-market capitalization companies, as indicated by a probability value of 0.1799 and a t-value of -1.38977. This leads to the rejection of hypothesis H1, confirming the lack of influence from DER. Conversely, EPS demonstrates a significant positive effect on stock returns with a probability value of 0.0108 and a t-value of 2.81261, resulting in the acceptance of hypothesis H2.

Additionally, ROE shows a substantial positive impact on stock returns, with a probability value of 0.0035 and a t-value of 3.314445, leading to the acceptance of hypothesis H3. In contrast, inflation does not significantly affect stock returns, as evidenced by a probability value of 0.1808 and a t-value of 1.386537, resulting in the rejection of hypothesis H4. Overall, EPS and ROE are key financial indicators influencing stock performance, while DER and inflation do not.

Table 4. T-Test Table (Partial) Company Mar. Medium Cap

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.63259	0.432474	-146.272	0.1591
DER	-0.15579	0.1121	-138.977	0.1799
EPS	-0.05747	0.020433	281.261	0.0108
ROE	16.57036	4.99944	3.31445	0.0035
Inflation	0.189736	0.136842	1.38654	0.1808

Source: Data processed 2021

Based on Table 5, the analysis of the data, the Effect of DER on stock returns reveals a probability value of 0.2633, which is above the significance level of 0.05, indicating that DER does not have a significant effect on stock returns within the small market capitalization company sample. Additionally, the t-value of -1.15102 exceeds the critical t-value of -1.969, suggesting a negative contribution to stock returns; thus, hypothesis H5 is rejected. Similarly, the results for EPS show a probability value of 0.8473, indicating that EPS also does not significantly impact stock returns, coupled with a t-value of 0.195069, less than the critical t-value. This leads to the rejection of hypothesis H6. Furthermore, the analysis of ROE presents a probability value of 0.5529, signifying no significant effect on stock returns, as the t-value of 0.6036 remains greater than -1.969, resulting in the rejection of hypothesis H7. Lastly, the findings indicate a probability value of 0.9238, which again exceeds the significance level, confirming that inflation does not affect stock returns, with a t-value of -0.09691 being more significant than the critical t-value. Consequently, hypothesis H4 is accepted.

Table 5. t-test (Partial) of Mar. Small Cap

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.06382	0.474453	-0.1345	0.8944
DER	-0.00767	0.006665	-115.102	0.2633
EPS	0.000146	0.000748	0.195069	0.8473
ROE	-0.57423	0.951342	-0.6036	0.5529
Inflation	-0.01474	0.152109	-0.09691	0.9238

Source: Data processed 2021

### 4.3. Discussion

#### Company Mar. Medium Cap

##### *Effect of DER on Stock Returns*

The t-test results indicate that the probability value for the DER is above the significance level of 0.05. Thus, DER does not significantly affect stock returns in the medium market capitalization sample. Furthermore, the negative contribution of DER to stock returns suggests that it may negatively impact investor returns, leading to the conclusion that H1 is rejected.

##### *Effect of EPS on Stock Returns*

The analysis shows that the probability value for Earnings Per Share (EPS) is below the significance level of 0.05. Therefore, EPS does have a significant positive effect on stock returns in the medium market capitalization sample. This finding indicates that a higher EPS can contribute positively to stock returns, leading to the acceptance of H2.

##### *Effect of ROE on Stock Returns*

The Return on Equity (ROE) results reveal a probability value below the significance threshold of 0.05, demonstrating that ROE significantly affects stock returns in the medium market capitalization sample. ROE's positive contribution to stock returns reinforces the conclusion that H3 is accepted, suggesting that improved ROE can enhance stock performance.

##### *Effect of Inflation on Stock Returns*

The t-test results for inflation show a probability value above 0.05, indicating that inflation does not significantly affect stock returns. The negative contribution to stock returns from inflation leads to the conclusion that H4 is rejected, meaning inflation is not a significant factor affecting returns in the medium market capitalization sample.

#### Company Mar. Small Cap

##### *Effect of DER on Stock Returns*

The t-test results for the DER indicate that the probability value exceeds the significance level, suggesting that DER does not significantly affect stock returns in small market capitalization companies. Additionally, the calculated t-value suggests a negative contribution to stock returns. Therefore, the hypothesis regarding the effect of DER on stock returns is rejected.

#### *Effect of EPS on Stock Returns*

The t-test results show that the probability value for EPS is also above the significance threshold, indicating that EPS does not significantly affect stock returns in small market capitalization companies. The calculated t-value provides evidence of a negative contribution to stock returns, leading to rejecting the hypothesis concerning the effect of EPS on stock returns.

#### *Effect of ROE on Stock Returns*

The findings related to ROE demonstrate that the probability value is above the significance level, which means ROE does not significantly affect stock returns in small market capitalization companies. The t-value indicates a negative contribution to stock returns, thus rejecting the hypothesis regarding ROE's effect on stock returns.

#### *Effect of Inflation on Stock Returns*

The t-test results for inflation show a probability value that exceeds the significance threshold, indicating that inflation does not significantly affect stock returns. The calculated t-value reflects a negative contribution to stock returns, which leads to the acceptance of the conclusion that inflation does not affect stock returns in small market capitalization companies.

## **5. Conclusion**

The research on firms in the construction, property, and real estate sectors from 2015 to 2019 concludes that the DER does not significantly affect stock returns, as investors often ignore its implications for medium-market capitalization companies. Conversely, EPS and ROE positively influence stock returns, suggesting that higher EPS indicates better performance and profits, leading to expectations of higher dividends. Additionally, inflation did not impact stock returns during this period, likely due to a stable inflation rate below 10% per year.

The research on companies with small market capitalization from 2015 to 2019 concludes that several financial metrics show specific trends. First, the DER does not significantly affect stock returns in the construction, property, and real estate sectors, as high DER raises concerns about financial stability and reliance on debt. Additionally, EPS does not impact stock returns, indicating that investors prioritize immediate capital gains over dividends. ROE similarly shows no significant influence, as profits are relatively low compared to the companies' market capitalization. Lastly, inflation did not affect stock returns during this period, likely due to stable and mild inflation rates that did not significantly impact investor sentiment.

Based on the research, several recommendations arise: future studies should include additional independent variables beyond DER, EPS, ROE, and inflation and utilize samples from multiple sectors for broader applicability. Investors in the construction, property, and real estate sectors should analyze EPS and ROE from financial statements and consider market capitalization before investing. Finally, creditors should carefully assess companies' financial performance before granting loans to ensure repayment capability.

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## Appendix

### Attachment 1. Research Sample Companies

No	Code	Name	Listing Date
1	ACST	Acset Indonusa Tbk.	24-Jun-13
2	ADHI	Adhi Karya (Persero) Tbk.	18-Mar-04
3	APLN	Agung Podomoro Land Tbk.	11-Nov-10
4	ASRI	Alam Sutera Realty Tbk.	18-Dec-07
5	BAPA	Bekasi Asri Pemula Tbk.	14-Jan-08
6	BEST	Bekasi Fajar Industrial Estate	10-Apr-12
7	BIPP	Bhuwanatala Indah Permai Tbk.	23-Oct-95
8	BKDP	Bukit Darmo Property Tbk.	15-Jun-07
9	BKSL	Sentul City Tbk.	28-Jul-97
10	BSDE	Bumi Serpong Damai Tbk.	06-Jun-08
11	CTRA	Ciputra Development Tbk.	28-Mar-94
12	DART	Duta Anggada Realty Tbk.	08-May-90
13	DGIK	Nusa Konstruksi Enjiniring Tbk.	19-Dec-07
14	DILD	Intiland Development Tbk.	04-Sep-91
15	DUTI	Duta Pertiwi Tbk.	02-Nov-94
16	ELTY	Bakrieland Development Tbk.	30-Oct-95
17	EMDE	Megapolitan Developments Tbk.	12-Jan-11
18	FMII	Fortune Mate Indonesia Tbk.	30-Jun-00
19	GAMA	Aksara Global Development Tbk.	11-Jul-12

20	GMTD	Gowa Makassar Tourism Development	11-Dec-00
No	Code	Name	Listing Date
21	GPRA	Perdana Gapuraprima Tbk.	10-Oct-07
22	GWSA	Greenwood Sejahtera Tbk.	23-Dec-11
23	INPP	Indonesian Paradise Property Tbk.	01-Dec-04
24	JKON	Jaya Construction Manggala Pratama	04-Dec-07
25	JRPT	Jaya Real Property Tbk.	29-Jun-94
26	KIJA	Industrial Estate Jababeka Tbk.	10-Jan-95
27	LPCK	Lippo Cikarang Tbk.	24-Jul-97
28	LPKR	Lippo Karawaci Tbk.	28-Jun-96
29	MDLN	Modernland Realty Tbk.	18-Jan-93
30	MKPI	Metropolitan Kentjana Tbk.	10-Jul-09
31	MTLA	Metropolitan Land Tbk.	20-Jun-11
32	MTSM	Metro Realty Tbk.	08-Jan-92
33	NIRO	City Retail Developments Tbk.	13-Sep-12
34	NRCA	Nusa Raya Cipta Tbk.	27-Jun-13
35	OMRE	Indonesia Prima Property Tbk.	22-Aug-94
36	PLIN	Plaza Indonesia Realty Tbk.	15-Jun-92
37	PTPP	PP (Persero) Tbk.	09-Feb-10
38	PUDP	Pudjiadi Prestige Tbk.	18-Nov-94
39	PWON	Pakuwon Jati Tbk.	09-Oct-89
40	RBMS	Ristia Bintang Mahkotasejati Tbk.	19-Dec-97
41	RDTX	Roda Vivatex Tbk.	14-May-90
42	WHEEL	Pikko Land Development Tbk.	22-Oct-01
43	SMDM	Suryamas Dutamakmur Tbk.	12-Oct-95
44	SMRA	Summarecon Agung Tbk.	07-May-90
45	SSIA	Surya Semesta Internusa Tbk.	27-Mar-97
46	TARA	Sitara Propertindo Tbk.	11-Jul-14
47	TOTL	Total Bangun Persada Tbk.	25-Jul-06
48	WIKA	Wijaya Karya (Persero) Tbk.	29-Oct-07
49	WSKT	Waskita Karya (Persero) Tbk.	19-Dec-12

## Declarations

### Funding

*The authors received no financial support for the research and publication of this article.*

### Conflicts of interest/ Competing interests:

The authors have no conflicts of interest to declare that are relevant to the content of this article.

### Data, Materials and/or Code Availability:

Data sharing is not applicable to this article as no new data were created or analyzed in this study.